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

GB/T 29165.1-2022

Replacing GB/T 29165.1-2012

**Petroleum and natural gas industries - Glass-reinforced plastics
(GRP) piping - Part 1: Vocabulary, symbols, applications and
materials**

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Table of Contents

Preface	
Introduction	
1 Scope	1
2 Normative references	2
3 Terms, Definitions, Symbols and Abbreviations	2
3.1 General terms	2
3.2 Technical terms	3
3.3 Symbols and abbreviations	15
4 pressure class	19
4.1 MPRxx	19
4.2 Partial coefficient	21
5 categories	21
5.1 Connector	21
5.2 Resin matrix	22
6 Material	23
7 size	23
Appendix A (Informative) Principle	25
Appendix B (informative) Guidance on scope limitations	30
Appendix C (Normative) Information Sheet	31
Appendix D (Normative) Wall Thickness Definition	34
Appendix E (informative) Selection of sub-item coefficients (f3, est) in the bidding process	35
Appendix F (informative) Example	40
Reference	56

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 the first part of GB/T 29165 "Glass Fiber Reinforced Plastic Pipes for Oil and Gas Industry". GB/T 29165 has

The following parts were released.

- Part 1.Vocabulary, symbols, applications and materials;
- Part 2.Evaluation and manufacture;
- Part 3.System Design;
- Part 4.Assembly, installation and operation.

This document replaces GB/T 29165.1-2012 "Glass fiber reinforced plastic pipes for oil and gas industry - Part 1.Vocabulary, symbols

Compared with GB/T 29165.1-2012, except for structural adjustment and editorial changes, the main technical changes are as follows.

- a) The scope of application of the document has been changed, and the pressure assessment method and classification of products have been added (see Chapter 1, Chapter 1 of the.2012 edition);
- b) The scope of application of this document has been added, such as piping used in pump caissons, silencers, I-beams, seawater risers and other similar items
(see Chapter 1);
- c) Added typical applications of GRP pipelines in the oil and gas industry (see Chapter 1);
- d) Added 23 terms such as "outer arc side", deleted 22 terms such as "component variable", and changed 24 terms such as "accelerator"
Definition of (see Chapter 3, Chapter 3 of the.2012 edition);
- e) Some symbols and abbreviations have been added (see Chapter 3);
- f) Deleted some symbols and abbreviations (see Chapter 3 of the.2012 edition);
- g) Added pressure terms, terms of load sub-items and related requirements (see Chapter 4);
- h) Added the classification of joints and resin matrix (see Chapter 5);
- i) The material requirements for component walls are added, and the requirements for external coatings are added (see Chapter 6);
- j) Typical maximum pressure-diameter ranges for piping in fluid services (e.g. water/hydrocarbon services) covered by this document have been added
(see Chapter 7);
- k) Added inquiry form (see Appendix C);
- l) The definition of wall thickness has been added (see Appendix D).

This document is equivalent to ISO 14692-1:2017 "Glass fiber reinforced plastic pipes for the oil and gas industry - Part 1. Vocabulary, symbols

Numbers, Applications and Materials".

Please note that some contents of this document may refer to patents. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

Glass fiber reinforced plastic pipe is a composite material with 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, manufacture, evaluation and operation of glass fiber reinforced plastic pipes

A series of technical documents for glass fiber reinforced plastic pipes in the oil and gas industry have been formulated. GB/T 29165 "Oil and Natural Gas Industry Glass

"Glass Fiber Reinforced Plastic Pipe" aims to provide the oil and gas industry with the basic terminology, materials, evaluation of glass fiber reinforced plastic pipes recognized by all parties.

Standards for determination, manufacture, design, assembly, installation and operation. According to the characteristics of each stage of the full service cycle of glass fiber reinforced plastic pipes, if

Application and materials, evaluation and manufacture, system design, assembly, installation and operation are composed of four parts.

--- Part 1. Vocabulary, symbols, applications and materials. The purpose is to provide information on basic terminology and notation for the remaining three sections, and to

Applications and materials are specified and required.

--- Part 2. Evaluation and manufacture. The purpose is to guide the system design, assembly of glass fiber reinforced plastics (GRP), and to provide

Quality requirements for assessing and manufacturing products.

--- Part 3. System Design. The aim is to provide a system design for the entire glass fiber reinforced plastic (GRP) piping system piping.

--- Part 4. Assembly, installation and operation. The purpose is to provide construction parties and users of glass fiber reinforced plastic (GRP) systems

refer to.

Compared with traditional metal materials and other non-metal material pipes, glass fiber reinforced plastic pipes have high strength, good performance, and product design

The degree of freedom is large, and the product has a wide range of applications. This document combines the specific use of glass fiber reinforced plastic pipes in the petroleum industry.

According to the characteristics of each stage of its full service cycle, it can guide all parties including the designer, manufacturer, construction party and user to provide glass

The application of fiber-reinforced plastic pipes in the oil and gas industry provides a complete system solution to ensure the safety of products in the oil and gas industry

Safe to use.

The process of using GB/T 29165/ISO 14692 (all parts) is shown in Figure 1.

Figure 1 Flow chart of using GB/T 29165/ISO 14692 (all parts)

Fiberglass reinforced plastic pipes for the oil and gas industry

Part 1.Vocabulary, symbols, applications and materials

1 Scope

This document specifies the product specifications according to the application method of the product, the type of joint and resin matrix, and the restrictions on the structure and size of the materials used.

Scope of application, pressure assessment method and classification. This document also specifies the terms, definitions and symbols, providing for other parts of GB/T 29165 guide.

GB/T 29165 (all parts) applies to glass fiber reinforced plastic (GRP) piping systems, the joints used in the system can prevent

The axial thrust caused by internal pressure, temperature change and fluid dynamics, the system design envelope is trapezoidal. GB/T 29165 (all parts) mainly

Suitable for offshore fixed and floating platforms, can also be used for other similar applications on land, such as produced water, fire fighting water systems and general industrial purposes

Specification, fabrication, testing and installation of GRP piping systems.

Since floating platforms allow the use of alternative codes and standards for GRP piping associated with ships and/or ballast systems, the

Refer to design, construction and certification standards for the hull or vessel in use. However, it is recommended to use GB/T 29165 (all parts) as much as possible.

GB/T 29165 (all parts) can also be used as a passage for pump caissons, silencers,