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

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**Large capacity fully wrapped carbon fiber reinforced gas
cylinders with plastic liners for compressed hydrogen**

大容积塑料内胆碳纤维全缠绕压缩氢气瓶

(English Translation)

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Foreword

This document is a standard or guiding technical document.

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 references ISO 11515:2022 "Gas cylinders with water capacity of 450L~3000L, refillable composite material reinforced tubing cylinders".

The draft of "Design, Manufacturing and Testing" is of a non-equivalent level of consistency.

1 Scope

This document specifies the types, models, and technical requirements of large-capacity plastic-lined carbon fiber fully wound compressed hydrogen cylinders (hereinafter referred to as "cylinders").

Requirements, test methods, inspection rules, as well as installation and protection, marking, electronic tags, packaging, transportation and storage requirements.

This document applies to applications with ambient temperatures ranging from -40°C to 60°C, nominal working pressure not exceeding 55MPa, and nominal volume not less than [amount missing].

A mobile, fully wrapped carbon fiber gas cylinder with a plastic liner, capable of being refilled with hydrogen, with a capacity of 450L and not exceeding 3000L.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 191 Packaging and Storage Graphic Symbols

GB/T 196 Basic Dimensions of Ordinary Threads

GB/T 228.1 Metallic materials - Tensile testing - Part 1: Test method at room temperature

GB/T 229 Metallic materials Charpy impact test method

GB/T 528 Determination of tensile stress-strain properties of vulcanized rubber or thermoplastic rubber

GB/T 533-2008 Determination of density of vulcanized rubber or thermoplastic rubber

GB/T 1040.1 Determination of tensile properties of plastics - Part 1: General principles

GB/T 1220 Stainless Steel Bars

GB/T 1458 Test Method for Mechanical Properties of Fiber-Wound Reinforced Composite Materials in Ring Specimens

GB/T 1633-2000 Determination of Vicat softening temperature (VST) of thermoplastics

GB/T 1636 Determination of apparent density of plastics that can flow out of a specified funnel

GB/T 1677 Determination of epoxy value of plasticizers

GB/T 2941-2025 General Procedures for Specimen Preparation and Conditioning in Physical Testing Methods for Rubber

GB/T 3190 Chemical composition of wrought aluminum and aluminum alloys

GB/T 3191 Aluminum and Aluminum Alloy Extruded Bars

GB/T 3362 Tensile Properties Test Method for Carbon Fiber Multifilament

GB/T 3452.2 O-rings for hydraulic and pneumatic applications - Part 2: Inspection specifications for appearance quality

GB/T 3512 Accelerated aging and heat resistance test of vulcanized rubber or thermoplastic rubber in hot air

GB/T 3634.1 Hydrogen - Part 1: Industrial Hydrogen

GB/T 3634.2 Hydrogen - Part 2: Pure Hydrogen, High-Purity Hydrogen and Ultra-Purity Hydrogen

GB/T 3682.1-2018 Plastics. Thermoplastics - Melt Mass Flow Rate (MFR) and Melt Volume Flow Rate (MVR) Determination Part 1: Standard Method

GB/T 3934 Technical Requirements for General Thread Gauges

GB/T 4612 Determination of epoxy equivalent in plastic epoxy compounds

GB/T 5720 Test Methods for O-rings

GB/T 6031 Determination of hardness of vulcanized rubber or thermoplastic rubber (10IRHD~100IRHD)