

ICS 27.010



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

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**General requirements of hydrogen fuelling stations
(English Translation)**

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1 Scope

This document specifies the classification, hydrogen supply mode, equipment and assemblies, hydrogen quality, electrical, control system, delivery information, testing, signs and nameplates, operation management, inspection and maintenance requirements of hydrogen fueling stations.

This document applies to hydrogen fueling stations that fuel with gaseous hydrogen. Hydrogen fueling facilities for hydrogen-powered ships, trams, aircraft, engineering vehicles and power generation equipment, etc. may also refer to this document for implementation.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 2893.5 Graphical Symbols - Safety Colors and Safety Signs - Part 5.Principles and Requirements for the Use of Safety Signs

GB 2894 Safety Signs and Guideline for the Use

GB/(T) 3836 (all parts) Explosive Atmospheres

GB/T 3836.15-2017 Explosive Atmospheres - Part 15.Electrical Installations Design, Selection and Erection

GB/T 9574 Rubber and Plastics Hoses and Hose Assemblies - Ratios of Proof and Burst Pressure to Maximum Working Pressure

GB/T 10543 Rubber Hoses and Hose Assemblies for Aircraft Ground Fueling and Defueling
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Specification

GB 12158 General Guideline for Preventing Electrostatic Accidents

GB/T 12241 Safety Valves - General Requirements

GB/T 12325 Power Quality - Deviation of Supply Voltage

HG 20202 Code for Construction and Acceptance of Degreasing Project

JJG 52 Elastic Element Pressure Gauges, Pressure-vacuum Gauges and Vacuum Gauges for

General Use

JJG 693 Alarmer Detectors of Combustible Gas

NB/T 10354 Tube Trailer

NB/T 10355 Tube Skid Container

SH/T 3503 Specification on Handover Technical Documentation for Petrochemical Construction Projects

SH/T 3543 Specification on Technical Documentation for Construction Process of Petrochemical Construction Projects

SH/T 3903 The Project Supervision Specification on Petrochemical Construction Work

SH/T 3904 Regulation for Acceptance of Completed Construction Projects in Petrochemical Industry

ISO 19880-5 Gaseous Hydrogen - Fueling Stations - Part 5. Dispenser Hoses and Hose Assemblies

3 Terms and Definitions

The terms and definitions defined in GB/T 24499, GB/T 29729, GB/T 31138, GB 50156 and GB 50516 and the following are applicable to this document.

3.1

hydrogen quality

The product quality of hydrogen and liquid hydrogen.

NOTE: it usually includes hydrogen purity and impurity content in hydrogen.

3.2

hydrogen unloading cabinet

Specialized equipment that connects tube trailers for gaseous hydrogen / tube skid containers for gaseous hydrogen, and has functions such as gas discharge, emergency cut-off, purging and venting, etc.

3.3

hydrogen-contacting equipment

Equipment that uses hydrogen or liquid hydrogen as the medium.

4 Classification of Hydrogen Fueling Stations

4.1

In accordance with the hydrogen supply mode, they can be classified into. in-station hydrogen production and hydrogen fueling stations, and off-station hydrogen supply and hydrogen fueling stations.

4.2

In accordance with the operation mode, they can be classified into. self-use hydrogen fueling stations and commercial hydrogen fueling stations.

4.3

In accordance with the pressure level of the service object, they can be classified into. 35 MPa level and 70 MPa level.

4.4

In accordance with the integration mode of the main in-station equipment, they can be classified into. mobile hydrogen fueling facilities and fixed hydrogen fueling stations.

NOTE: mobile hydrogen fueling facilities are skid-mounted hydrogen fueling equipment in which the equipment, assemblies and frames are integrated and fixed on the chassis, which is convenient for transportation, simple installation and use on site.

5.1 Basic Provisions

Hydrogen fueling stations may supply hydrogen through tube trailers for gaseous hydrogen transportation, tube skid containers for gaseous hydrogen transportation, lorry trucks for liquid hydrogen transportation, tank containers for liquid hydrogen transportation, pipeline transportation or in-station hydrogen production.

5.2.1 Hydrogen supply through tube trailers / tube skid containers for gaseous hydrogen

5.2.1.1

Hydrogen fueling stations may supply hydrogen through tube trailers / tube skid containers. Tube trailers / tube skid containers can discharge hydrogen into hydrogen storage vessels in hydrogen fueling stations and directly leave, and they can also be used as hydrogen storage vessels in the hydrogen fueling stations.

5.2.1.2

The tube trailers for gaseous hydrogen shall comply with the requirements of NB/T