



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

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Replacing GB 50028-2006

**Code for design liquefied petroleum gas (LPG) supply
engineering**

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(English Translation)

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1 General

1.0.1

This code is formulated in order to make the design of liquefied petroleum gas supply project meet the requirements of safe production, guaranteed supply, advanced technology, reasonable economy and environmental protection.

1.0.2

This code is applicable to the design of newly built, expanded and reconstructed liquefied petroleum gas pipeline transportation projects and the following urban liquefied petroleum gas supply projects with a storage volume less than or equal to 10000m³.

- 1 Liquefied petroleum gas storage station, storage and distribution station and filling station;
- 2 LPG gasification station, gas mixing station and bottle group gasification station;
- 3 Liquefied petroleum gas bottled supply station.

1.0.3

This code does not apply to the design of the following liquefied petroleum gas projects and devices.

- 1. Liquefied petroleum gas processing, storage, filling and transportation engineering of refineries, petrochemical plants, oil and gas fields and natural gas processing devices;
- 2 Fully refrigerated storage, semi-refrigerated storage, filling and transportation engineering of liquefied petroleum gas (except for the fire distance between fully refrigerated storage

tanks and semi-refrigerated storage tanks and buildings, structures, and storage yards outside the station);

3 LPG transportation facilities for ocean and inland waterway transportation;

4 Liquefied petroleum gas installations used on ships, railway vehicles and automobiles;

5 LPG vehicle filling station.

1.0.4

The design of liquefied petroleum gas supply project shall not only comply with the provisions of this specification, but also comply with the relevant current national standards.

2.0.1 LPG supply station

It has the functions of storage, loading and unloading, filling, gasification, gas mixing, distribution, etc., and is a special place for the purpose of storage and distribution, gasification (gas mixing) or operation of liquefied petroleum gas. It is the general name of liquefied petroleum gas plants and stations. Including storage station, storage and distribution station, filling station, gasification station, gas mixing station, bottle group gasification station and bottled supply station.

2.0.2 LPG stored station

Composed of storage and loading and unloading equipment, it is a special place mainly for storage, and the main function is to distribute liquefied petroleum gas to filling stations, gasification stations and gas mixing stations.

2.0.3 LPG stored and delivered station

Composed of storage, filling and loading and unloading equipment, it is a special place with the main function of storing liquefied petroleum gas and the auxiliary function of liquefied petroleum gas filling.

2.0.4 LPG filling station

It is composed of filling, storage and loading and unloading equipment, and it is a special place with liquefied petroleum gas filling operation as its main function.

2.0.5 LPG vaporizing station

Composed of storage and gasification equipment, the main function is to convert liquid liquefied petroleum gas into gaseous liquefied petroleum gas, and supply gas to users through pipelines.

2.0.6 LPG-air(other fuel gas)mixing station

It is composed of storage, gasification and gas mixing equipment. After converting liquid liquefied petroleum gas into gaseous liquefied petroleum gas, it is mixed with air or other gas in a certain proportion to form a mixed gas. After the pressure is stabilized, the gas is supplied to users through pipelines. place.

2.0.7 Vaporizing station of multiple cylinder installations

Equipped with 2 or more liquefied petroleum gas cylinders, adopt natural or forced gasification method to convert liquid liquefied petroleum gas into gaseous liquefied petroleum gas, and supply gas to users through pipelines after stabilized pressure.

2.0.8 Bottled LPG delivered station

Special place for operating and storing bottled liquefied petroleum gas.

2.0.9 Fully pressurized storage tank

Storage tanks containing liquefied petroleum gas at room temperature are characterized by storage pressure changes with ambient temperature.

2.0.10 Semi-refrigerated storage tank

Storage tanks for liquefied petroleum gas at lower temperatures and lower pressures.

2.0.11 Fully refrigerated storage tank

Storage tanks for liquefied petroleum gas at low temperature and atmospheric pressure.

3 Basic Regulations

3.0.1

Liquid liquefied petroleum gas can be transported by pipelines, railway tank cars and automobile tank cars, and the choice of transport mode should be determined after technical and economic comparison.

3.0.2

The quality of liquefied petroleum gas shall comply with the relevant provisions of the current national standard "Liquefied Petroleum Gas" GB 11174 and "Technical Specifications for Town Gas" GB 50494.

1 The vehicle refueling area and the process equipment area of the liquefied petroleum gas supply station should be arranged separately, and the middle should be separated by a solid wall;

- 2 The plane layout and process design of the vehicle refueling area shall comply with the relevant provisions of the current national standard "Code for Design and Construction of Automobile Refueling Stations" GB 50156;
- 3 The vehicle refueling area shall be equipped with special external entrances and exits, and shall comply with the relevant provisions of the current national standard "Code for Design and Construction of Automobile Refueling Stations" GB 50156;
- 4 The fire separation distance between the gas dispenser and the LPG storage tank in the LPG supply station shall not be less than the fire separation distance between the vehicle tank truck loading and unloading platform column (loading and unloading port) and the LPG storage tank in Table 5.2.10 of this code;
- 5 The fire separation distance between the liquefied petroleum gas storage tank and the liquefied petroleum gas supply station independently installed in the vehicle refueling area shall not be less than the provisions in Table 5.2.8 of this code;
- 6 The fire separation distance between the buildings in the vehicle refueling area and the LPG storage tanks in the LPG supply station shall not be less than the regulations for office buildings in Table 5.2.10 of this code.

3.0.16

LPG supply stations shall not be set up on underground or semi-underground buildings.

4.1 General provisions

4.1.1

The line selection of pipelines for transporting liquid liquefied petroleum gas shall meet the following requirements.

- 1 It shall meet the requirements of urban planning, public safety and pipeline protection along the line, and comprehensively consider geological and meteorological conditions.
2. The area with small terrain undulation and easy transportation and construction management should be selected.
- 3 Do not pass through areas where people gather, such as residential areas and public buildings, warehouse areas, dangerous goods areas, etc.; do not pass through buildings that have nothing to do with it.
- 4 Do not pass through water source protection areas, factories, large public places and mineral resource areas, etc.
5. Areas prone to geological hazards should be avoided.
- 6 Avoid or reduce crossing obstacles and facilities such as rivers, railways, highways and subways.