



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

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**Technical code for fire protection water supply and hydrant
systems**

(English Translation)

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1.0.1 This Code is developed to properly design the fire water and fire hydrant system,

1 General Provisions

1.0.1

This Code is developed to properly design the fire water and fire hydrant system, to ensure construction quality, to standardize inspection and maintenance management, to reduce fire hazards and to protect personal and property safety.

1.0.2 This Code applies to the design, construction, inspection and maintenance

management of fire water and fire hydrant systems of the new construction, expansion and renovation of industrial, commercial and municipal construction.

1.0.3 The design, construction, inspection and maintenance of fire water and hydrant systems should follow the relevant national policies, and effective technical measures should be taken combined with engineering features to achieve safety, reliability, advanced technology, low-cost and utility, and environment protection.

1.0.4 The components and equipment of the fire water and hydrant system used in project shall be products complying with the requirements of existing national standards and access system.

1.0.5 The design, construction, inspection and maintenance of the fire water and hydrant system shall not only comply with this Code, but also should be consistent with existing national standards.

2.1.1 Fire water

Water sources that provide fire water to water fire-extinguishing facilities, vehicle-carried or hand-carried and other mobile fire pumps, fixed fire pumps, including municipal water supply, fire reservoir, gravity fire reservoir and natural water sources.

2.1.2 Constant high-pressure fire protection water supply system

The water supply system that always keeps the working pressure and flow required by the water fire-extinguishing facilities and pressurizes directly without a fire pump in fire.

2.1.6 Gravity fire reservoir

The water storage facility set in a high place that directly provides gravity water supply for water fire-extinguishing facilities.

2.1.7 Elevated / gravity fire tank

The water storage facility set in a high place that directly provides gravity water demand in initial fire disaster for water fire-extinguishing facilities.

2.1.11 Static pressure

The pressure at a point of the pipe in static in the fire water system pipe network, referred to as static pressure.

3.1 General requirements

3.1.1

The outdoor fire water demand of factories, warehouses, storage yards, storage tank area or civil buildings should be determined according to the number of fires at the same time and the outdoor fire water required for extinguishing a fire. The number of fires at the same time should meet the following requirements.

3.1.2

The design flow rates of the fire water required for extinguishing a fire should consist of the design flow rates of the various water fire-extinguishing systems that need to function at the same time, including building outdoor fire hydrant system, indoor fire hydrant system, automatic sprinkler system, foam extinguishing system, water spray system, fixed fire monitor extinguishing system, fixed cooling water system, and should meet the following requirements.

3.2.1 Fire flow rates for town shall be calculated and determined according to local fire

statistics, firefighting water demand statistics, fire water demand guaranteed rate, building composition, municipal water supply network running rationality and other factors based on comprehensive analysis.

3.3.1 Fire flow rates of outdoor hydrant for building should be determined based on a

comprehensive analysis according to the building function, volume, fire rating, fire risk and other factors.

3.4.7 The fire flow rates of full pressure, semi-frozen and full frozen liquid ammonia tank shall be determined based on calculation according to the requirements of full pressure and semi-refrigerated storage tank in Article 3.4.5 of this Code, but the spray intensity shall be not less than 6.0L/ (min · m²) for calculation, and the fire flow rates of the cooling water system of full frozen liquid ammonia tank should be calculated according to the requirements that the full frozen liquefied hydrocarbon tank is a single containment tank with steel outer wall.

4.1.1 Within the scope of urban and rural planning area, municipal fire water should

be planned, designed and implemented synchronously with municipal pipe network.

4.1.2 The fire water quality should meet the functional requirements of water extinguishing facilities.

4.2 Municipal water supply

4.2.1

When the municipal water supply network provides continuous water, the municipal water supply network may be used to supply water directly for the fire water supply system.

4.3.2 Calculation of the effective volume of fire water should meet the following requirements.

4.4 Natural water and others

4.4.1

Wells and other groundwater sources can be used as fire water.

4.4.2 If a well supplies water directly to the fire water system as fire water, its most

unfavorable water level should satisfy the water absorption requirements of the pump, and the minimum flow and the pump head should meet the fire requirements;

4.4.4 If the outdoor fire water is natural water, technical measures should be taken to prevent ice, float, suspended solids and other substances from clogging the fire pump and to ensure the safety of taking water.

4.4.5 If natural water is used as the fire water, it should meet the following requirements.

5.1 Fire pump

5.1.1

The type of fire pump should be determined based on the reliability, installation site, fire water, fire water flow rates, head design and other factors, the pump drive should be direct drive by motor or diesel engine, and the fire pump should not be dual-powered type with double motors or based on diesel engine.