



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

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**Technical standard for auto tracking and targeting jet
suppression system**

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1 General

1.0.1 This standard is formulated for the purpose of rationally designing automatic tracking and positioning jet fire extinguishing systems, ensuring construction quality, standardizing acceptance and maintenance management, reducing fire losses, and protecting personal and property safety.

1.0.2 This standard applies to the design, construction, acceptance and maintenance management of automatic tracking and positioning jet fire extinguishing systems in newly built, expanded and rebuilt civil and industrial buildings.

This standard does not apply to the design, construction, acceptance and maintenance management of automatic tracking and positioning jet fire extinguishing systems in special functional buildings such as gunpowder, explosives, ammunition, pyrotechnics factories and warehouses, nuclear power plants and hangars.

1.0.3 The design, construction, acceptance and maintenance management of the automatic tracking and positioning jet fire extinguishing system should be closely combined with the function of the protected object, fire characteristics and system characteristics, so as to be safe, reliable, advanced in technology, and economical and reasonable.

1.0.4 The components, materials and equipment of the automatic tracking and positioning

jet fire extinguishing system shall be selected from products that meet the relevant current national standards.

1.0.5 The design, construction, acceptance and maintenance management of the automatic tracking and positioning jet fire extinguishing system shall not only comply with this standard, but also comply with the current relevant national standards.

2.1.1 auto tracking and targeting jet suppression system

Using water as the jet medium, the detection device is used to automatically detect, track and locate the initial fire, and the automatic control method is used to realize the fixed fire extinguishing system of jet fire extinguishing, including fire extinguishing device, detection device, control device, water flow indicator, analog terminal Water testing device and main components such as pipe network and water supply facilities.

Automatic tracking and positioning jet fire extinguishing system can be divided into automatic fire monitor fire extinguishing system, jet type automatic jet fire extinguishing system and spray type automatic jet fire extinguishing system.

2.1.2 automatic fire monitor system

The fire extinguishing device is an automatic tracking and positioning jet fire extinguishing system with a flow rate greater than 16L/s.

2.1.3 eject type automatic jet system eject type automatic jet system

The flow rate of the fire extinguishing device is not greater than 16L/s and not less than 5L/s, and the jet mode is a jet type automatic tracking and positioning jet fire extinguishing system.

2.1.4 spray type automatic jet system spray type automatic jet system

The flow rate of the fire extinguishing device is not greater than 16L/s and not less than 5L/s, and the jet mode is a spray type automatic tracking and positioning jet fire extinguishing system.

2.1.5 fire extinguishing device fire extinguishing device

Fire extinguishing equipment that sprays water media in the form of jets, including automatic fire monitors, jet-type automatic fire-extinguishing devices, and spray-type automatic fire-extinguishing devices.

2.1.6 Detection device fire detecting device

It is a device with the functions of automatically detecting and locating the fire source, and transmitting the fire source signal to the control device.

2.1.7 control device control device

The control and information processing components of the system are capable of receiving and processing fire detection signals in a timely manner, sending out control and alarm information, driving fire extinguishing devices to extinguish fire at fixed points, receiving feedback signals, and completing corresponding display and recording at the same time, and reporting to the fire alarm controller or fire linkage. The controller is a device that transmits functions such as signals.

2.1.8 automatic control automatic control

In the automatic state, the system automatically completes fire detection, alarm, and activates the fire extinguishing device to implement a control method for fire extinguishing.

2.1.9 manual control in fire control room

It is a control method in which the personnel on duty manually start the fire pump, open the control valve, and adjust the fire extinguishing device to aim at the fire source to extinguish the fire through the system control host operation panel installed in the fire control room.

2.1.10 Manual control on site

After the on-site personnel discover the fire, through the on-site control box, manually start the fire pump, open the control valve, and adjust the fire extinguishing device to aim at the fire source to implement a fire extinguishing control method.

2.2 Symbols

Ch--Haichen-William coefficient;

D - the design maximum protection radius of the fire extinguishing device;

D0 - the maximum protection radius of the fire extinguishing device at the rated working pressure;

d - the inner diameter of the pipe;

dj - the calculated inner diameter of the pipe;

h1-head loss along the way;

h2-local head loss;

hc--the minimum water pressure of the municipal pipe network when the fire pump directly pumps water from the urban municipal pipe network;

i--head loss along the pipeline per unit length;

L--calculate the length of the pipeline;

N--Designed number of simultaneously activated fire extinguishing devices;

P--Design pressure required by the fire pump or fire water supply system;

P0 - the rated working pressure of the fire extinguishing device;

Pe - the design working pressure of the fire extinguishing device;

Q--the design flow rate of the system;

q--the design flow rate of the fire extinguishing device;

q0 - the rated flow rate of the fire extinguishing device;

qg--pipe design flow rate;

qn--the design flow rate of the nth fire extinguishing device;

v - the average flow velocity in the pipeline;

Z-the elevation difference between the inlet of the fire extinguishing device at the most unfavorable point and the lowest water level of the fire pool or the horizontal centerline of the water supply inlet pipe of the system;

zeta--local resistance coefficient;

sum h--The total loss of water head in the pipeline from the outlet of the pump to the inlet of the fire extinguishing device at the most unfavorable point.

3.1 Applicable places

3.1.1 The automatic tracking and positioning jet fire extinguishing system can be used to put out fires in civil buildings, Class C production workshops, and Class C warehouses, and the following places where the fire category is Class A.

1 High and large space places with a headroom height greater than 12m;

2 The headroom height is greater than 8m and not greater than 12m, and it is difficult to install an automatic sprinkler system in a tall and large space.

3.1.2 The automatic tracking and positioning jet fire extinguishing system shall not be used in the following places.

1 There are often open fire operations;

2 Not suitable for water protection;

3 There is obvious occlusion;

4 The level of fire spreading is fast;