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

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**Fire dampers for building venting and smoke-venting system
(English Translation)**

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1 Scope

This standard specifies the terms and definitions, classification and marking, materials and accessories, requirements, test methods, inspection rules, marking, packaging, transportation, storage of fire dampers, fire dampers in smoke-venting system and smoke dampers (hereinafter referred to as valves) for building ventilation, air conditioning, smoke exhaust systems.

This standard is applicable to fire dampers installed in the ventilation and air conditioning system of industrial and civil buildings and underground buildings as well as the fire dampers in smoke-venting system and smoke dampers installed in the mechanical smoke exhaust systems of industrial and civil buildings and underground buildings.

2 Normative references

The provisions in following documents become the provisions of this standard through reference in this standard. For the dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this standard;

however, parties who reach an agreement based on this standard are encouraged to study if the latest versions of these documents are applicable.

For undated references, the latest edition of the referenced document applies.

GB/T 191 Packaging - Pictorial marking for handling of goods (GB/T 191-2000, eqv ISO 780.1997)

GB/T 1804-2000 General tolerances - Tolerances for linear and angular dimensions without individual tolerance indications (eqv ISO 2768-1.1989)

GB/T 2624 Measurement of fluid flow by means of orifice plates, nozzles and Venturi tubes inserted in circular cross-section conduits running full

GB 4717-1993 General technical conditions for fire alarm control unit

GB 9969.1 General principles for preparation of instructions for use of industrial products

GB/T 9978-1999 Fire-resistance tests - Elements of building construction (neq ISO/FDIS 834-1.1997)

GB/T 13306 Plates

GB/T 13384 General specification for packaging of mechanical and electrical products

GB/T 14436 General principles of industrial product guarantee documents

3 Terms and definitions

The following terms and definitions apply to this standard.

3.1

Fire damper

A valve which is installed in the air supply and return pipeline of the ventilation and air conditioning system. It is normally opened; it is closed when the smoke temperature in the pipeline reaches 70 °C in case of fire; it meets the requirements for smoke leakage and fire integrity within a certain period of time, functions to barrier the smoke and fire.

Fire dampers generally consist of components such as valve bodies, blades, actuators, temperature sensors.

3.2

Fire damper in smoke-venting system

A valve which is installed in the pipeline of the mechanical smoke exhaust system. It is normally opened; it is closed when the smoke temperature in the smoke exhaust pipeline reaches 280 °C in case of fire; it meets the requirements for smoke leakage and fire integrity within a certain period of time, functions to barrier the smoke and fire.

Fire damper in smoke-venting system generally consists of components such as valve bodies, blades, actuators, temperature sensors.

3.3

Smoke damper

A valve which is installed at the end of each branch pipe of the mechanical smoke exhaust system (smoke gas suction). It is normally closed and meets the requirements of air leakage, can be opened manually or powered in case of fire or where smoke exhaust is required, functions to exhaust smoke. The valve which is equipped with a decorative opening or subjected to decorative

Example 2.PFHF WSDc-Phi1000 indicates a fire damper in smoke-venting system which has a temperature sensor automatic close, manual close, electronically controlled electromagnet close, remote reset functions, as well as a nominal diameter of 1000 mm.

Example 3.PYF SDc-K-400X400 indicates a smoke damper which has manual open, electronically controlled electromagnet open, feedback function of the opening position signal of valve, as well as a nominal diameter of 400 mm X 400 mm.

5.1 Materials and components

5.1.1

Valve body, blade, baffle, actuator's bottom plate and outer casing should be made of such materials as cold-rolled steel plate, galvanized steel plate, stainless-steel plate or inorganic fireproof board.

5.1.2

The decorative opening of the smoke damper should be made of such materials as aluminum alloy, steel plate.

5.1.3

The important moving parts such as ratchet (cam) in bearings, bushings, actuators are made of corrosion-resistant materials such as brass, bronze, stainless-steel.

5.1.4

The production of various types of springs shall comply with the requirements of the corresponding national standards.

5.2 Accessories

5.2.1

The actuator of the valve shall be a product that has passed the testing of the testing organization as authorized by the state.

5.2.2

The temperature sensor element of the actuator of the fire damper or the fire damper in smoke-venting system shall be marked of its nominal action temperature.

6.1 Appearance

6.1.1

The plate on the valve shall be firm. The marking shall be clear and accurate.

6.1.2

The surface of each component of the valve shall be smooth and flat. It shall not have such defects as cracks, craters, obvious irregularities, hammer

6.6 Manual control

6.6.1

Fire damper or fire damper in smoke-venting system should have manual closing mode. the smoke damper shall have manual opening mode. Manual operation shall be convenient, flexible, reliable.

6.6.2

The operating force for manual close or open shall not exceed 70 N.

6.7 Electric control

6.7.1

Fire damper or fire damper in smoke-venting system should have an electric close mode. The smoke damper should have an electric open mode. A valve which has a remote reset function shall, after energized and actioned, have a signal output which indicates the position of the valve's blade.

6.7.2 The working voltage of the electronic control circuit in the valve's actuator

should adopt the rated working voltage of DC24 V. The rated working current shall not exceed 0.7 A.

6.7.3 When the actual power supply voltage is lower than the rated working voltage by 15% and higher than the rated working voltage by 10%, the valve shall be able to be electrically controlled.

6.8 Insulation performance

The insulation resistance between the external live terminal and the valve body which has insulation requirements shall, under normal temperature, be more than 20 Mohm.