



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

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Technical standard for chimney engineering

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1 General

1.0.1 In order to standardize and guide the design, construction and acceptance of chimneys, ensure personal health, life and property safety, and ecological environment safety, and meet the basic needs of chimney engineering construction, this standard is formulated in accordance with relevant laws and regulations.

1.0.2 This standard applies to the design, construction and acceptance of new concrete chimneys, fiber reinforced plastic chimneys, steel chimneys, brick chimneys and other single-tube chimneys, telescopic chimneys and multi-tube chimneys, and applies to the reinforcement and inspection of existing chimneys. Anti-corrosion transformation.

1.0.3 The design, construction and acceptance of the chimney shall not only comply with the provisions of this standard, but also comply with the relevant current national standards.

2.0.1 Chimney chimney

Tall structures used to vent fumes.

2.0.2 dry chimney dry chimney

A chimney that discharges flue gas with a relative humidity of less than 60% and a temperature of not less than 90°C.

2.0.3 humid chimney humid chimney

A chimney that discharges flue gas with a relative humidity greater than 60% and a temperature greater than 60°C but less than 90°C.

2.0.4 Wet chimney wet chimney

A chimney that discharges flue gas with a saturated relative humidity and a temperature not greater than 60°C.

2.0.5 Self-supporting chimney

Without any additional support, the cylinder itself forms a chimney with a stable structure.

2.0.6 guyed chimney guyed chimney

The chimney of the stable system is composed of the cylinder body and the cable.

2.0.7 framed steel chimney tower type steel chimney

The inner cylinder mainly bears its own vertical load, and the horizontal load is mainly borne by the steel chimney of the steel tower.

2.0.8 Single tube chimney single tube chimney

The lining and insulation layer are directly supported on the corbels of the tube wall or the lining is directly pasted on the common chimney of the tube wall.

2.0.9 Sleeve chimney single liner chimney

A chimney of the inner cylinder is arranged in the cylinder wall.

2.0.10 Multi-pipe chimney multi-liner chimney

A chimney consisting of two or more inner cylinders sharing an outer cylinder wall or tower.

2.0.11 Inner cylinder liner

Exhaust stacks in the wall of sleeve and multi-pipe chimneys.

2.0.12 Lining

The self-supporting structure supported in sections on the corbels of the tube wall or the pouring body directly attached to the tube wall by the anchor bars distributed on the tube wall plays a protective role for the heat insulation layer or the tube wall.

2.0.13 Shaft

The part above the foundation of the chimney, including the cylinder wall, insulation layer and inner lining.

2.0.14 Cylinder wall shell

The outermost structure of the chimney body is the load-bearing part of the whole body.

2.0.15 insulation layer

It is a structure placed between the cylinder wall and the inner lining so that the temperature of the cylinder wall does not exceed the specified maximum temperature.

2.0.16 Self-supporting inner cylinder self-supporting liner

Under the action of self-weight load, the smoke exhaust pipe mainly bears the compressive stress in the vertical direction and is supported by the outer cylinder in the horizontal direction.

2.0.17 suspended liner

Under the action of gravity load, the exhaust pipe mainly bears the tensile stress in the vertical direction and is supported by the outer cylinder in the horizontal direction.

2.0.18 Confining bed

The acid-resistant mortar layer on the outside of the brick inner cylinder is used to seal the smoke and prevent or reduce the leakage of the smoke.

2.0.19 flue flue

The part of the smoke extraction system that directs the smoke into the chimney.

2.0.20 vortex induced resonance vortex shedding

When the frequency of the vortex shedding generated by the wind flowing through the chimney surface is equal to or close to the natural frequency of the structure, the phenomenon of transverse wind resonance occurs.

2.0.21 Critical wind speed for vortex shedding

The lowest wind speed at which the chimney resonates across the wind direction.

2.0.22 lock area lock in

When the vortex shedding frequency of the wind is equal to or close to the natural frequency of the structure, the wind speed range in which vortex induced resonance occurs.

2.0.23 Strake(vane)

A damping device that reduces vortex induced resonance response by dampening the regular vortex shedding of the wind.

2.0.24 fiber reinforced plastic inner cylinder fiber reinforced plastic (FRP) liner

It is an inner cylinder that is manufactured, connected and installed in sections by mechanical winding molding technology, using fiber and its products as reinforcing materials and synthetic resin as matrix material.

2.0.25 reactive flame-retardant resin reactive flame-retardant resin

The molecular main chain contains chlorine, bromine, phosphorus and other flame retardant elements. After no or a small amount of auxiliary flame retardant materials (such as antimony trioxide) are added, the cured fiber reinforced plastic material can be difficult to ignite and self-extinguishing from fire. Extinguishing performance resin. These resins are not flame retardant in liquid state.

2.0.26 matrix material matrix

The resinous part of a fiber-reinforced plastic material.

2.0.27 limited oxygen index limited oxygen index (LOI)

Under the specified conditions, the minimum oxygen concentration (volume percentage) required to maintain the equilibrium combustion of the specimen in the mixture of nitrogen and oxygen.

2.0.28 flame-spread rating

An index value determined by standard methods for fiber reinforced plastic laminates with a thickness of 3 mm to 4 mm, reinforced with glass fiber chopped strand mat, and a resin content of 70% to 75%.

2.0.29 winding angle

The angle between the length direction of the fiber bundle or belt wound on the mandrel and the meridian or generatrix of the mandrel.

2.0.30 reinforcement material reinforcement

A fiber material that can significantly improve the mechanical properties of composite products when added to the resin matrix.

2.0.31 heat-deflection temperature (HDT)

When the resin casting body specimen is in the specified liquid heat transfer medium with constant temperature rise, according to the simply supported beam model, under the specified static load, the temperature when the specified amount of deformation occurs.

2.0.32 Glass transition temperature glass transition temperature