

JB

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

JB/T 8906-2014

Replacing JB/T 8906-1999

Cantilever crane

悬臂起重机

(English Translation)

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1 Scope

This standard specifies the terms and definitions, types and basic parameters, technical requirements, test methods, inspection rules and markings, packaging, transportation, storage of cantilever cranes defined in 3.1.3.9 of GB/T 6974.1-2008.

This standard applies to cantilever cranes, that work in general working environments and use electric hoists and (or) self-propelled or towed electric trolleys as lifting mechanisms (hereinafter referred to as cranes). For other types of cantilever cranes, it can also be used as a reference.

This standard does not apply to cranes under the following conditions:

- Pitching and luffing;
- Nuclear radiation environment, toxic gas environment;
- Lifting molten metal, flammable, explosive items.

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) is applicable to this standard.

GB 755-2008 Rotating electrical machines - Rating and performance

GB/T 1184-1996 Geometrical tolerancing - Geometrical tolerance for features without individual tolerance indications

GB/T 1228 High strength bolts with large hexagon head for steel structures

GB/T 1229 High strength large hexagon nuts for steel structures

GB/T 1230 High strength plain washers for steel structures

GB/T 1231 Specifications of high strength bolts with large hexagon head, large hexagon nuts, plain washers for steel structures

GB 2893 Safety colors 4 ohm (the user is responsible).

5 Technical requirements

5.1.4

The altitude of the crane installation and use site shall generally not exceed 1000 m; when it exceeds 1000 m, the output power of the motor shall be corrected according to the requirements of 7.7.2.4 in GB/T 3811-2008; when it exceeds 2000 m, it shall be in accordance with the requirements of Appendix B in GB 14048.1-2012.

5.1.5

Climate conditions when the crane is working indoors:

- a) The ambient temperature does not exceed 40 °C; the average temperature within 24 h does not exceed 35 °C;
- b) The ambient temperature is not lower than -5 °C;
- c) The relative humidity at 40 °C does not exceed 50%.

5.1.6

Climate conditions when the crane is working outdoors:

- a) The ambient temperature does not exceed 40 °C; the average temperature within 24 hours does not exceed 35 °C;
- b) The ambient temperature is not lower than -20 °C;
- c) When the ambient temperature is at the highest temperature of 40 °C, the relative humidity shall not exceed 50%; higher humidity can be allowed at lower temperatures (such as 90% at 20 °C); the harmful effects of accidental condensation shall be avoided, by properly designing electrical equipment or using appropriate additional facilities (such as heaters, air conditioners, drainage holes, etc.) in necessary places;
- d) The working wind pressure shall not be greater than 150 Pa inland (equivalent to level 5 wind), or 250 Pa along the coast (equivalent to level 6 wind);
- e) The maximum wind pressure in non-working state is generally 800 Pa (equivalent to level 10 wind), which can also be agreed upon separately.

5.1.7

The operating conditions of the motor shall comply with the provisions of Chapter 6 and Chapter 7 of GB 755-2008.

5.1.8

The normal use, installation, operation conditions of electrical appliances shall comply with the provisions of Chapter 6 of GB 14048.1-2012.

Note: When exceeding the above range, the user shall negotiate with the manufacturer to resolve.

5.4.3.1

Both the crane operating mechanism and the trolley operating mechanism shall be equipped with travel switches, stops, track sweeping plates, buffers. The operating of electric hoist may not be equipped with travel switches and track sweeping plates.

5.4.3.2

When there are two cranes on the same track, anti-collision devices shall be installed between them. If the distance between them needs to be strictly controlled, a fixed-distance device should be set.

5.2 Basic requirements

5.2.1

The design and manufacture of cranes shall comply with the relevant provisions of GB/T 3811, GB 6067.1 and this standard.

5.2.2

The electronic control equipment of cranes shall comply with the provisions of GB 5226.2 and this standard.

5.2.3

The selection, layout, wire laying, auxiliary facilities of components involved in the electrical transmission system and electrical control system shall comply with the provisions of Chapter 7 of GB/T 3811-2008.

5.3 Performance in use

5.3.1

The lifting capacity of the crane shall reach the rated lifting capacity. For a crane with a fixed sling, its rated lifting capacity refers to the maximum mass of the weight hanging on the fixed sling of the crane; for a crane with a detachable sling, its rated lifting capacity refers to the sum of the mass of the detachable sling and the maximum mass of the weight hanging on the detachable sling of the crane.

5.3.2

Parameters related to the use of the crane shall comply with 4.2 and the requirements of the user in the order contract.

5.3.3

During the static load test, the crane shall be able to withstand a test load of 1.25 times the rated lifting capacity. After the test, a visual inspection shall be carried out.

The stressed metal structural parts shall be free of cracks and permanent deformation, paint peeling or damage that affects the performance and safety of the crane; the joints shall not be loose or damaged.

5.3.4

During the dynamic load test, the crane shall be able to withstand a test load of 1.1 times the rated lifting capacity. During the test, each component shall be able to complete its functional test; the safety devices such as brakes shall act sensitively and reliably. After the test, a visual inspection is carried out. All mechanisms and structural parts shall be free of damage; all joints shall be free of looseness or damage.

5.3.5

The vertical static deflection of the crane shall meet the following requirements:

- a) The hoisting trolley running on the boom will not lose control during normal operation;
- b) The boom shall not rotate on its own.

5.3.6

The static rigidity for pillar jib cranes, wall jib cranes, wall-pillar fixed cranes is recommended as follows: the vertical static deflection caused by the rated lifting weight and the deadweight load of the hoisting trolley (hoist) at the effective radius shall not exceed the provisions of Table 4.

5.4.4 Slewing mechanism

5.4.4.1

When necessary, a slewing locking device shall be installed.

5.4.4.2

When it is necessary to limit the slewing range, a slewing angle limiter shall be installed.

5.4.4.3

Brakes shall be provided; the selection of brake safety factors shall comply with the provisions of 6.1.3.5 in GB/T 3811-2008.