



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

GB 50278-2010

**Code for construction and acceptance of crane installation
engineering**

起重设备安装工程施工及验收规范

(English Translation)

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1.0.1

This standard is developed in order to improve the installation-engineering construction level of cranes, promote technological progress; ensure engineering quality & safety and to improve economic performance.

1.0.2

This standard is applicable to the construction and acceptance of the installation engineering carried out with electric hoist, overhead crane with simple girder, overhead traveling crane, portal bridge crane and cantilever crane.

1.0.3

Sound hoisting scheme must be developed for the hoisting with large, special and complex cranes or for the crane hoisting in special and complex circumstance. If building structure is used as the important load-carrying point for hoisting; the load-carrying capability of the structure must be calculated and the scheme must be approved the former design organization in written form.

1.0.4

In addition to the requirements stated in this standard, the construction and acceptance of crane installation engineering shall meet the provisions specified in current national relevant standards.

9.1.1

Before test run of crane, it shall be inspected according to the following requirements.

1 As for hydraulic system, transmission case, lubrication point and movement mechanism, the performance, specification and amount of the lubricant shall be in accordance with the requirements of accompanying technical documents.

2 Brake, lifting weight limiter, hydraulic safety overflow mechanism, overspeed and speed-limiting protection, overpressure and undervoltage protection, as well as overcurrent protection shall be adjusted and calibrated according to the requirements of accompanying technical documents.

3 Stop block, electrical system, interlocking device and emergency power off device shall be sensitive, correct and reliable.

4 Operation direction of electromotor as well as operation indication direction of hand wheel, hand grip, button and controller shall be consistent with the actual direction of mechanism movement and action.

5 Wire cable ends shall be fixed and wound correctly and reliably on the grabbing device, pulley block and coiling block.

6 The buffer, buffer stop, rail clamping device and anchorage device shall be correct, sensitive, safe and reliable.

9.2.1

At the specified working range, each mechanism, electrical control system and grabbing device shall operate normally; each limit stopper, safety device and interlocking device shall be sensitive and reliable; operating handle, operating button and master controller shall be consistent with the action of each mechanism.

9.2.2

When the hoisting mechanism and grabbing device go up to the terminal and limiting position, the slowdown terminal switch and limit switch shall accurately, reliably and timely give an alarm and power off.

9.2.3

When the trolley runs to the limiting position, its terminal low speed protection, limit alarm and limit shall be accurate and reliable.

9.2.4

Cart running shall be in accordance with the following requirements.

- 1 Alarm sound or alarm bell sound shall accompany the movement.
- 2 When it moves to the limiting position at the cart track end, end alarm and limit shall

Note: 1 Camber for crane shall be inspected according to the requirements of Appendix B of this code.

2 S is the crane span (mm); L0 is the length of the effective cantilever (mm).

9.3.2

After the static test of the crane, the static stiffness of the crane shall be inspected with rated lifting weight at the girder mid-span and effective cantilever. The static stiffness value shall be in accordance with the requirements of accompanying technical documents, and the inspection shall be in accordance with the following requirements.

- 1 Drive the no-load trolley to the end-span or outrigger, set measuring reference point at the girder mid-span or effective cantilever.
- 2 Drive the trolley to the girder mid-span or effective cantilever, lift loads of rated lifting weight to 200mm away from the ground, inspect after the loads are stable.
- 3 Static stiffness values of the crane girder or cantilever shall be calculated by the distance that measuring reference point vertically moving down.

9.4.1

Dynamic load test run of each mechanism shall be carried out respectively. The combined activity test run, if required, shall be in accordance with the requirements of accompanying technical document.

9.4.2

Dynamic load test run of each mechanism shall be carried out on the whole travel route. Test load shall be 1.1 times of the rated lifting weight. Accumulative start and running time of electric crane shall not be less than 1h and that of manual crane shall not be less than 10 min. Action of each mechanism shall be sensitive, stable and reliable. Action of safety protection, interlocking device and limit switch shall be sensitive, accurate and reliable.

9.4.3

In cart running of portal bridge crane, loads shall be at the mid-span.

9.4.4

Under any operation condition of column cantilever crane, independent gyration of cantilever and incontrollable operation of trolley shall not occur.

9.4.5

The mechanism and structure of unloaded crane shall be free from damage, permanent deformation, connection looseness, weld failure and shrinkage. Hydraulic system and sealing positions shall be free from leakage.

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