



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

GB 50275-2010

**Code for construction and acceptance of fan, compressor and
pump installation
(English Translation)**

Issued on: July 15, 2010

Implemented on: February 1, 2011

**Issued by: Ministry of Housing and Urban-Rural Construction of the
People's Republic**

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Explanation of Wording in This Code

List of Quoted Standards

1 General Provisions

1.0.1 This standard is formulated with a view to guaranteeing quality and safe operation of fan,

1 General Provisions

1.0.1

This standard is formulated with a view to guaranteeing quality and safe operation of fan, compressor and pump installation engineering, and promoting technological advances of fan, compressor and pump installation.

1.0.2

This standard is applicable to the construction and acceptance for installation engineering of the following fans, compressors and pumps.

1 Centrifugal fan, centrifugal blower, axial fan, axial blower, Roots and Jaeger blower, anti-explosion fan and firefighting smoke extractor fan;

2 Displacement reciprocating type, screw type, sliding blade type and membrane type

compressor, axial flow compressor and centrifugal compressor;

3 Centrifugal pump, well pump, membrane pump, metering pump, mixed-flow pump, axial

pump, vortex pump, screw pump, gear pump, rotor pump, submersible water pump, turbine pump, water ring pump, and reciprocating pump.

1.0.3 The construction and acceptance of fan, compressor and pump installation engineering shall not only comply with this standard, but also the requirements specified in the relevant current standards of the country.

oxygen, the parts, component, pipes as well as the accessories shall be de-oiled, and the oil residue level after de-oiling shall not be larger than 125mg/m²; they shall be blown dry with dry air or nitrogen after de-oiling, and treated with oil-free sealing;

3 Oil pump, filter, oil cooler, safety valve, etc., equipped in lubricating system and sealing system shall be dismantled and cleaned;

4 The tightness test shall be conducted for oil cooler at maximum working pressure, and the

oil cooler shall have no leakage, 10min after pressure maintaining;

5 In the site assembly, mating surfaces and machining surface of the machine, surface of rotatable parts, as well as attached equipment of the components, shall be washed and cleaned; the rust, if have, shall be removed, and the rust-proofing measures shall be taken to prevent rusting during installation period;

6 The regulating mechanism shall be washed and cleaned, and it shall rotate smoothly.

2.1.4 Centering for shafts (axes) of fan units shall meet the following requirements.

1 The machine located in shafting or with large mass or great installation difficulty shall be selected as reference machine for centering.

2 Non-reference machine shall be centered and leveled on the base of reference machine, and the shafting of the unit in work shall be made continuous smooth curve equivalent to the lift on both ends;

3 The final centering of the unit shafting shall be conducted by practical rotor passing through the coupling, and it shall meet the requirements of items 1 and 2 in this article.

2.1.5 The end clearance, radial displacement and axial slope of the coupling shall meet the provisions of the accompanying technical documents; if no provisions related are available, the relevant provisions stated in the current national standard "General Code for Construction and Acceptance of Mechanical Equipment Installation Engineering" GB 50231 shall apply.

2.1.6 Besides the relevant requirements in the current national standards "Code for Construction and Acceptance of Industrial Metallic Piping" GB 50235 and "Code of Acceptance for Construction Quality of Ventilation and Air Conditioning Works" GB 50243, the air inlet, gas exhaust piping and other pipelines of fans shall meet the following requirements.

1 The pipeline, large valve, regulating device, cooling device and lubricating oil system, etc. of fan air inlet and gas exhaust systems, shall be provided with independent support. Such supports shall be connected firmly with the base or other buildings; for connecting with the fan casting, the external force shall not be applied on the fan casting. After the connection, the installation level and main clearance of the units shall be re-measured, and they shall meet the requirements of the accompanying technical documents;

2 There shall be no permanent support, affecting thermal expansion and contraction, on the straight pipe segment connected with fan air inlet and outlet (exhaust) flange;

3 For connecting the pipeline and the fan, the flange face shall be centered and parallel;

4 The installation of the compensators in the gas circuit system shall meet the requirements of the accompanying technical documents.

2.1.7 Between the flange jointing surfaces on the fan casting shall be applied with a layer of sealing gum; the bolt threaded portion shall be coated with binding gum, and the bolt shall be tightened up according to the specified moment or the nut rotation angle.

2.1.8 If the fan driver is a rotor-through motor, the clearance between the shaft shoulder and the bearing bush of the sliding bearing hereof, as well as the axial displacement and clearance of the coupling, shall be determined according to the magnetic center location of the motor.

2.1.9 The lubricating, sealing and hydraulic control systems of fans shall be washed and cleaned; the compression parts of the lubrication, sealing, hydraulic control, cooling and gas circuit systems of the fans after assembling shall be applied with tightness test at the maximum working pressure, and they shall have no leakage, 10min after pressure maintaining; the test pressure for a fan cooling system shall not be less than 0.4MPa.

2.1.10 The installation of the cable and pipelines for testing and control instruments of the fan shall not disturb dismantling bearings, sealing and fan internals.

2.1.11 The fan vibration isolator shall be located on correct position, and the compression amount of all vibration isolators (groups) shall be uniform. The deviation hereof shall meet the requirements of the accompanying technical documents.

2.1.12 The fans before test run shall meet the following requirements.

1 The bearing box and oil tank shall be filled with lubricating oil upon being washed, cleaned and inspected; the specification and amount of the filled lubricating oil shall meet the requirements of the accompanying technical documents;

2 The rotation direction or the drivers like motor, steam turbine and tail gas turbine shall meet the requirements of the accompanying technical documents;

3 The rolling fan shall be free from friction or impacting;

4 The lubricating system and the hydraulic control system shall run normally;

5 The cooling water system shall have normal water supply;

6 The safety/interlock alarm and the stop control system of fans shall be applied with simulation test, and they shall meet the following requirements.

1) The pressure of the cooling system shall not be less than the specified minimum value;

2) The oil level and pressure of the lubricating oil shall not be less than the specified minimum value;

3) The temperature and temperature rise of the bearings shall be higher than the specified maximum value;

4) The effective value or the peak to peak of the bearing vibration velocity shall not exceed