
Cranes — Test code and procedures

Appareils de levage à charge suspendue — Code et méthodes d'essai

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 4310 was prepared by Technical Committee ISO/TC 96, *Cranes*, Subcommittee SC 4, *Test methods*.

This second edition cancels and replaces the first edition (ISO 4310:1981), which has been technically revised.

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Cranes — Test code and procedures

1 Scope

This International Standard specifies tests, inspections and procedures for verifying the conformance of a crane with its operational specifications and its capability to lift rated loads (see ISO 7363).

This International Standard is applicable to the types of cranes designated in ISO 4306-1, prior to first use following manufacture or after modification or repair of the load-bearing structure or a component of an individual crane.

Where rated loads are governed by stability, a test procedure and test load are specified that permit stability margins to be easily verified.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4306-1, *Cranes — Vocabulary — Part 1: General*

ISO 7363, *Cranes and lifting appliances — Technical characteristics and acceptance documents*

ISO 11629, *Cranes — Measurement of the mass of a crane and its components*

ISO 13202, *Cranes — Measurement of velocity and time parameters*

ISO 14518, *Cranes — Requirements for test loads*

3 Types of testing and inspection procedures

3.1 Three types of test and inspection procedures are to be used to accomplish the aims of this International Standard:

- a) testing and inspection of cranes for conformity to specifications, as required in 4.1;
- b) visual inspection, as required in 4.2;
- c) testing of cranes for lifting loads, as required in 4.3.

3.2 Manufactured cranes ready for service shall be tested and inspected by the manufacturer prior to delivery. Cranes mounted or finally assembled at their places of use shall be tested and inspected prior to being put into service. Any agreements between the manufacturer/vendor and the purchaser¹⁾ shall include test and inspection.

In the case of serially manufactured cranes, the sample number of cranes to be tested and inspected should be established by mutual agreement between the manufacturer/vendor and the purchaser.

4 Test and inspection procedures

4.1 Conformity tests and inspections

When cranes are tested and inspected for conformity to specifications, the tests and inspections shall be performed according to the crane load characteristics as defined in ISO 7363.

The following parameters shall be verified:

- mass of the crane;
- distance from axis of rotation to the tilt axis;
- load lifting height;
- hook approaches;
- load lifting/lowering speed;
- precision load lowering speed;
- crane travelling speed;
- crab traversing speed;
- slewing speed;
- derricking/luffing time;
- telescoping time;
- cycle time (where necessary);
- functioning of limiting, indicating and safety devices;
- performance of driving medium, for example, motor currents under test load conditions.

Verify the above parameters wherever practical.

Measure the mass of the crane and its components in accordance with ISO 11629.

Measure the velocities and time parameters in accordance with ISO 13202.

1) In legal terms, the manufacturer/vendor and the purchaser are understood to be the parties who signed the contract. The manufacturer/vendor is the party supplying the crane. The purchaser is the party who receives the crane according to the contract.