INTERNATIONAL STANDARD

ISO 17440

First edition
2014-06-01

Cranes — General design — Limit states and proof of competence of forged steel hooks

Appareils de levage à charge suspendue — Conception générale — États limites et vérification d'aptitude des crochets forgés

Reference number
ISO 17440:2014(E)

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Published in Switzerland

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2. www.iso.org/directives

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/TC 96, *Cranes*, Subcommittee SC 8, *Jib cranes*.

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Cranes — General design — Limit states and proof of competence of forged steel hooks

1 Scope

This International Standard is intended to be used together with the other relevant International Standards in its series. As such, they specify general conditions, requirements and methods to prevent hazards in hooks as part of all types of cranes.

This International Standard covers the following parts of hooks and types of hooks:

— bodies of any type of point hooks made of steel forgings;

— machined shanks of hooks with a thread/nut suspension.

NOTE 1 The principles of this International Standard can be applied to other types of shank hooks and also where stress concentration factors relevant to that shank construction are determined and used. Plate hooks, which are those assembled from one or several parallel parts of rolled steel plates are not covered in this International Standard.

This International Standard is applicable to hooks from materials with ultimate strength of not more than 800 N/mm^2 and yield stress of not more than 600 N/mm^2.

The following is a list of significant hazardous situations and hazardous events that could result in risks to persons during normal use and foreseeable misuse. Clauses 4 to 8 of this document are necessary to reduce or eliminate the risks associated with the following hazards:

a) exceeding the limits of strength (yield, ultimate, fatigue);

b) exceeding temperature limits of material;

c) unintentional disengagement of the load from the hook.

The requirements of this International Standard are stated in the main body of the document and are applicable to hook designs in general. The hook body and shank designs listed in Annexes A, B and G are only examples and should not be referred to as requirements of this International Standard.

This International Standard is applicable to cranes manufactured after the date of its publication, and serves as a reference base for product standards of particular crane types.

NOTE 2 This International Standard deals only with the limit state method in accordance with ISO 8686-1.

2 Normative references

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

ISO 148-1, *Metallic materials — Charpy pendulum impact test — Part 1: Test method*

ISO 148-2, *Metallic materials — Charpy pendulum impact test — Part 2: Verification of testing machines*

ISO 643, *Steels — Micrographic determination of the apparent grain size*

ISO 965-1, *ISO general purpose metric screw threads — Tolerances — Part 1: Principles and basic data*

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