BS EN 13001-1:2015

BSI Standards Publication

Cranes — General design

Part 1: General principles and requirements

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This British Standard is the UK implementation of EN 13001-1:2015. It supersedes BS EN 13001-1:2004+A1:2009 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee MHE/3/1, Crane design.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

Cranes - General design - Part 1: General principles and requirements

Appareils de levage à charge suspendue - Conception générale - Partie 1 : Principes généraux et prescriptions

Krane - Konstruktion allgemein - Teil 1: Allgemeine Prinzipien und Anforderungen

This European Standard was approved by CEN on 16 February 2015.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 13001-1:2015) has been prepared by Technical Committee CEN/TC 147 “Cranes - Safety”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2015, and conflicting national standards shall be withdrawn at the latest by October 2015.

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

This document supersedes EN 13001-1:2004+A1:2009.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

The major changes in this revision are in 4.2.7.2, 4.3.3 and 4.4.4. Annex B has been added.

This European Standard is one part of EN 13001. The parts are the following ones:

— *Part 1: General principles and requirements*;

— *Part 2: Load actions*;

— *Part 3-1: Limit States and proof competence of steel structure*;

— *Part 3-2: Limit states and proof of competence of wire ropes in reeving systems*;

— *Part 3-3: Limit states and proof of competence of wheel/rail contacts*;

— *Part 3-4: Limit states and proof of competence of machinery* [currently at Enquiry stage];

— *Part 3-5: Limit states and proof of competence of forged hooks* [Technical Specification].

For the relationship with other European Standards for cranes, see Annex A.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

This European Standard has been prepared to be a harmonized standard to provide one means for the mechanical design and theoretical verification of cranes to conform to the essential health and safety requirements of the Machinery Directive, as amended. This standard also establishes interfaces between the user (purchaser) of the crane and the designer, as well as between the designer and the component manufacturer, in order to form a basis for selecting cranes and components.

This European Standard is a type C standard as stated in EN ISO 12100.

The crane parts, components or machinery concerned and the extent to which hazards are covered are indicated in the scope of this standard.

When provisions of this type C standard are different from those, which are stated in type A or B standards, the provisions of this type C standard take precedence over the provisions of the other standards, for machines that have been designed and built according to the provisions of this type C standard.

1 Scope

This European Standard specifies general principles and requirements to be used together with EN 13001-2 and the EN 13001-3 series of standards, and as such they specify conditions and requirements on design to prevent mechanical hazards of cranes, and a method of verification of those requirements.

NOTE Specific requirements for particular types of crane are given in the appropriate European Standard for the particular crane type.

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. Clause 4 of this European Standard is necessary to reduce or eliminate the risks associated with the following hazards:

a) instability of the crane or its parts (tilting);

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

c) elastic instability of the crane or its parts (buckling, bulging);

d) exceeding temperature limits of material or components;

e) exceeding the deformation limits.

This European Standard is applicable to cranes which are manufactured after the date of approval by CEN of this standard and serves as reference base for the European Standards for particular crane types.

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.

EN 13001-2, *Crane safety — General design — Part 2: Load actions*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

ISO 2394, *General principles on reliability for structures*

ISO 4306-1:2007, *Cranes — Vocabulary — Part 1: General*

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 12100:2010 and, for the definitions of loads, in ISO 4306-1:2007, Clause 6, and the following apply.