Irish Standard
I.S. EN 13001-3-3:2014

Cranes - General design - Part 3-3: Limit states and proof of competence of wheel/rail contacts

I.S. EN 13001-3-3:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

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This document is based on:	*Published:*
EN 13001-3-3:2014	2014-10-08

This document was published under the authority of the NSAI and comes into effect on:	ICS number:
2014-10-25	53.020.20
	NOTE: If blank see CEN/CENELEC cover page

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Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13001-3-3

October 2014

ICS 53.020.20

English Version

Cranes - General design - Part 3-3: Limit states and proof of competence of wheel/rail contacts

Appareils de levage à charge suspendue - Conception générale - Partie 3-3 : Etats limites et vérification d'aptitude des contacts galet/rail

Krane - Konstruktion allgemein - Teil 3-3: Grenzzustände und Sicherheitsnachweis von Laufrad/Schiene-Kontakten

This European Standard was approved by CEN on 16 August 2014.

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Contents

Page

Foreword

This document (EN 13001-3-3:2014) 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of an identical text or by endorsement, at the latest by April 2015, and conflicting national standards shall be withdrawn at the latest by April 2015.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 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.

This European Standard is one part of EN 13001, *Cranes — General design*. The other parts are as follows:

— *Part 1: General principles and requirements*

— *Part 2: Load actions*

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

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

— *Part 3-4: Limit states and proof of competence of machinery*

— *Part 3-5: Limit states and proof of competence of forged hooks*

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

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 provide a means for the mechanical design and theoretical verification of cranes to conform with the essential health and safety requirements. This European Standard also establishes interfaces between the user (purchaser) 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 machinery concerned and the extent to which hazards are covered are indicated in the Scope of this European 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 is to be used together with EN 13001-1 and EN 13001-2 and as such they specify general conditions, requirements and methods to prevent mechanical hazards of wheel/rail contacts of cranes by design and theoretical verification. This European Standard covers requirements for steel and cast iron wheels and is applicable for metallic wheel/rail contacts only.

Roller bearings are not in the scope of this European Standard.

Exceeding the limits of strength is a significant hazardous situation and hazardous event that could result in risks to persons during normal use and foreseeable misuse. Clause 5 to Clause 6 of this European Standard are necessary to reduce or eliminate the risks associated with this hazard.

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

This European Standard is for design purposes only and should not be seen as a guarantee of actual performance.

EN 13001-3-3 deals only with limit state method in accordance with EN 13001-1.

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.

EN 13001-1, *Cranes - General design - Part 1: General principles and requirements*

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

EN ISO 6506-1, *Metallic materials - Brinell hardness test - Part 1: Test method (ISO 6506-1)*

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

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

ISO 12488-1:2012, *Cranes — Tolerances for wheels and travel and traversing tracks — 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, ISO 4306-1 and the following apply.

3.1.1
wheel
rolling component in a rolling contact enabling relative movement between two crane parts

EXAMPLE Crane travel wheels, trolley traverse wheels, guide rollers and wheels/rollers supporting slewing structures.

Note 1 to entry: Roller elements in rolling bearings are not considered as wheels.