



**SLOVENSKI STANDARD**  
**SIST EN 15011:2011/kFprA1:2013**  
**01-september-2013**

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**Žerjavi - Mostni in portalni (kozičasti) žerjavi - Dopolnilo A1**

Cranes - Bridge and gantry cranes

Krane - Brücken- und Portalkrane

Appareils de levage à charge suspendue - Ponts roulants et portiques

**Ta slovenski standard je istoveten z: EN 15011:2011/FprA1**

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**ICS:**

53.020.20      Dvigala                                      Cranes

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
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**FINAL DRAFT**  
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English Version

## Cranes - Bridge and gantry cranes

Appareils de levage à charge suspendue - Ponts roulants  
et portiques

Krane - Brücken- und Portalkrane

This draft amendment is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 147.

This draft amendment A1, if approved, will modify the European Standard EN 15011:2011. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## Foreword

This document (EN 15011:2011/FprA1:2013) has been prepared by Technical Committee CEN/TC 147 "Cranes - Safety", the secretariat of which is held by BSI.

This document is currently submitted to the Unique Acceptance Procedure.

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.

**EN 15011:2011/FprA1:2013 (E)****1 Modification to Clause 1, Scope**

*Replace the 1<sup>st</sup> paragraph with the following one:*

"This European Standard applies to bridge and gantry cranes able to travel by wheels on rails, runways or roadway surfaces, and to gantry cranes without wheels mounted in a stationary position."

**2 Modifications to Clause 2, Normative references**

*Replace*

"EN 1993-6:2007" with "EN 1993-6";

"EN 12077-2:1998+A1:2008" with "EN 12077-2";

"EN 13001-2:2004+A3:2009", with "EN 13001-2" and replace "effects" with "action" in the title;

"prEN 13001-3-1" with "EN 13001-3-1";

"EN 13557:2004" with "EN 13557:2003+A2:2008";

"EN 13586:2004+A1:2008" with "EN 13586".

*Delete the following references:*

"EN 13135-1, *Cranes — Equipment — Part 1: Electrotechnical equipment*

EN 13135-2:2004+A1:2010, *Cranes — Equipment — Part 2: Non-electrotechnical equipment*";

"EN ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology (ISO 12100-1:2003)*

EN ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles (ISO 12100-2:2003)*".

*Add the following references:*

"EN 13135, *Cranes — Safety — Design — Requirements for equipment*";

"EN ISO 12100, *Safety of machinery — General principles for design — Risk assessment and risk reduction*".

**3 Modifications to Clause 3, Terms and definitions**

*Replace the 1<sup>st</sup> paragraph with the following one:*

"For the purposes of this document, the terms and definitions given in EN ISO 12100, EN ISO 3744, EN ISO 11202, EN ISO 11203, EN ISO 11204 and the following apply."

*Replace definition 3.1 with the following:*

"crane able to move along rails or runways having at least one primarily horizontal girder and equipped with at least one hoisting mechanism".

*Replace definition 3.2 with the following:*

"crane able to travel by wheels on rails, runways or roadway surfaces, or crane without wheels mounted in a stationary position, having at least one primarily horizontal girder supported by at least one leg and equipped with at least one hoisting mechanism".

#### 4 Modifications to Clause 5, Safety requirements and/or protective measures

##### *In 5.1*

*First paragraph, 2<sup>nd</sup> sentence, replace "EN ISO 12100-2" with "EN ISO 12100".*

*2<sup>nd</sup> bullet, replace "effects" with "actions".*

*3<sup>rd</sup> bullet, replace "prEN 13001-3-1" with "EN 13001-3-1".*

*5<sup>th</sup> and 6<sup>th</sup> bullets, replace*

*"EN 13135-1, Cranes — Equipment — Part 1: Electrotechnical equipment;*

*EN 13135-2, Cranes — Equipment — Part 2: Non-electrotechnical equipment;"*

*with*

*"EN 13135, Cranes — Safety — Design — Requirements for equipment;".*

*In 5.2.1.2, first paragraph, replace "EN 13001-2:2004+A3:2009, Table 10" with "EN 13001-2".*

*In 5.2.1.3.1, replace the 2<sup>nd</sup> and 3<sup>rd</sup> paragraphs with the following:*

"For masses with unfavourable gravitational load effect the factors shall be taken as  $\delta = 0,10$  and  $\phi_1 = 1,10$ , and for masses with favourable gravitational load effect as  $\delta = 0,05$  and  $\phi_1 = 0,95$ , unless other values are obtained by measurements or calculations."

*In 5.2.1.3.2.1, 2<sup>nd</sup> Paragraph, replace the last sentence with the following:*

"A calculation model for the determination of the dynamic rope force history at the hoisting event is presented in Annex C."

*In 5.2.1.3.2.4, first paragraph, replace "EN 13001-2:2004+A3:2009, Table 3" with "EN 13001-2".*

*In 5.2.1.3.3, 3<sup>rd</sup> paragraph, replace "EN 13001-2:2004+A3:2009, 4.2.2.3" with "EN 13001-2".*

## EN 15011:2011/FprA1:2013 (E)

## In 5.2.1.3.4

2<sup>nd</sup> paragraph, replace "EN 13001-2:2004+A3:2009, 4.2.2.4" with "EN 13001-2".

Replace Table 3 with the following:

"

Drive type	Factor $\phi_5$	
	Typical backlash for gearbox	Considerable backlash, e.g. open gears
Stepless speed control	1,2	1,5
Multi step speed control	1,6	2,0
Two step speed control	1,8	2,2
Single step speed control	2,0	2,4

"

Replace Table 4 with the following:

"

Drive type	Factor $\phi_5$ lifting	Factor $\phi_5$ lowering
	Stepless speed control	1,05
Multi step speed control	1,15	1,20
Two step speed control	1,20	1,35
Single step speed control	1,20	1,30

"

## In 5.2.1.4.1

Replace the 2<sup>nd</sup> paragraph with the following:

"In general the skewing forces shall be addressed to load combination B. Where the crane is provided with continuously active anti-skew devices, the forces, without the benefit of anti-skew devices (e.g. failure of the device), shall be addressed to load combination C."

In Note 1, replace "EN 13001-2:2004+A3:2009, 4.2.3.4" with "EN 13001-2".



In 5.2.1.4.2, replace Table 6 with the following:

"

Skew component	Skew angle resulting from	Flanged wheels	Guide rollers
$\alpha_g$	Track clearance	$\alpha_g = s_{g \min} / W_b$ when $s_g \leq \frac{4}{3} s_{g \min}$ $\alpha_g = 0,75 \cdot s_g / W_b$ when $s_g > \frac{4}{3} s_{g \min}$	
	Crane travelling; Recommended minimum track clearances	$s_{g \min} = 10 \text{ mm}$	$s_{g \min} = 5 \text{ mm}$
	Trolley traversing; Recommended minimum track clearances	$s_{g \min} = 4 \text{ mm}$	$s_{g \min} = 2 \text{ mm}$
$\alpha_t$	Tolerances (wheel alignment and straightness of the rail)	$\alpha_t = 0,001 \text{ rad}$	
$\alpha_w$	Wear of wheel flanges/rollers and rails	$\alpha_w = 0,10 \cdot b_h / W_b$	$\alpha_w = 0,03 \cdot b_h / W_b$

"

In 5.2.1.4.3

In Formula (4), replace

" $\mu_0$  is the adhesion factor equal to 0,30;"

with the following:

" $\mu_0$  is the friction factor:

$\mu_0 = 0,3$  for cleaned rails;

$\mu_0 = 0,2$  for non-cleaned rails in usual environment;"

Delete the last paragraph.