



# SLOVENSKI STANDARD

## SIST EN 1992-1-1:2005/AC:2011

01-februar-2011

Nadomešča:

SIST EN 1992-1-1:2005/AC:2008

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**Evrokod 2: Projektiranje betonskih konstrukcij - 1-1. del: Splošna pravila in pravila za stavbe**

Eurocode 2: Design of concrete structures - Part 1-1: General rules and rules for buildings

Eurocode 2: Bemessung und Konstruktion von Stahlbeton- und Spannbetontragwerken - Teil 1-1: Allgemeine Bemessungsregeln und Regeln für den Hochbau

Eurocode 2: Calcul des structures en béton - Partie 1-1: Règles générales et règles pour les bâtiments

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**Ta slovenski standard je istoveten z: EN 1992-1-1:2004/AC:2010**

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**ICS:**

91.010.30	Tehnični vidiki	Technical aspects
91.080.40	Betonske konstrukcije	Concrete structures

**SIST EN 1992-1-1:2005/AC:2011** en,fr,de

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EUROPEAN STANDARD

**EN 1992-1-1:2004/AC**

NORME EUROPÉENNE

November 2010

EUROPÄISCHE NORM

Novembre 2010

November 2010

ICS 91.080.40; 91.010.30

English version  
Version Française  
Deutsche Fassung

Eurocode 2: Design of concrete structures - Part 1-1: General rules and rules for buildings

Eurocode 2: Calcul des structures en béton  
- Partie 1-1: Règles générales et règles  
pour les bâtiments

Eurocode 2: Bemessung und Konstruktion  
von Stahlbeton- und  
Spannbetontragwerken - Teil 1-1:  
Allgemeine Bemessungsregeln und Regeln  
für den Hochbau

This corrigendum becomes effective on 10 November 2010 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 10 novembre 2010 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 10. November 2010 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No.: EN 1992-1-1:2004/AC:2010 D/E/F

## EN 1992-1-1:2004/AC:2010 (E)

**Modifications due to EN 1992-1-1:2004/AC:2008 (as modified by EN 1992-1-1:2004/AC:2010)****1 Modifications to National annex for EN 1992-1-1**

2nd paragraph, list, replace “6.8.6(2)” with “6.8.6(3)”.

2nd paragraph, list, replace “J.1(3)” with “J.1(2)”.

**2 Modification to 1.2.2**

Replace:

“EN ISO 17760: Permitted welding process for reinforcement”

with the following:

“EN ISO 17660 (all parts): Welding – Welding of reinforcing steel”.

**3 Modification to 3.1.3**

Table 3.1, 9<sup>th</sup> row, last column replace:

“ $\varepsilon_{c1}(\text{‰}) = 0,7 f_{cm}^{0,31} < 2,8$ ”

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with the following:

“ $\varepsilon_{c1}(\text{‰}) = 0,7 f_{cm}^{0,31} \leq 2,8$ ”.

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[7c8ce419e474/sist-en-1992-1-1-2005-ac-2011](https://standards.iteh.ai/catalog/standards/sist/dfec84db-71e0-4511-9237-7c8ce419e474/sist-en-1992-1-1-2005-ac-2011)

**4 Modifications to 3.1.4**

Paragraph (4), replace:

“ $\varphi_k(\infty, t_0)$ ”

with the following:

“ $\varphi_{nl}(\infty, t_0)$ ”.

Paragraph (4), replace:

“ $k_\sigma$  is the stress-strength ratio  $\sigma_c / f_{cm}(t_0) \dots$ ”

with the following:

“ $k_\sigma$  is the stress-strength ratio  $\sigma_c / f_{ck}(t_0)$ , where  $\sigma_c$  is the compressive stress and  $f_{ck}(t_0)$  is the characteristic concrete...”.

**5 Modification to 3.2.4**

Paragraph (2), Note, replace “Values of  $(f_t/f_y)_k$  and...” with “Values of  $k = (f_t/f_y)_k$  and...”.

**6 Modification to 3.2.5**

Paragraph (2)P, replace “with EN ISO 17760” with “with EN ISO 17660”.

**7 Modifications to 3.2.7**

Paragraph (2), replace in entry a) “ $\gamma_s$ ” with “ $\gamma_s$ ”.

Figure 3.8, replace “ $\gamma_s$ ” with “ $\gamma_s$ ”.

**8 Modification to 3.3.2**

Paragraph (9) replace “10.3.2.2 applies” with “10.3.2.1 applies”.

**9 Modification to 3.3.6**

Figure 3.10, replace “ $\gamma_s$ ” with “ $\gamma_s$ ”.

**10 Modification to 4.4.1.3**

Paragraph (4) replace “minimum cover” with “nominal cover”.

**11 Modification to 5.1.1**

Delete Clause (5) and renumber Paragraphs "(6)P" as "(5)P", "(7)" as "(6)" and "(8)" as "(7)".

**12 Modifications to 5.2**

Paragraph (5), replace:

“ $l$  is the length or height [m], see (4)”

with the following:

“ $l$  is the length or height [m], see (6)”.

Replace Figure 5.1 a2) with the following one:

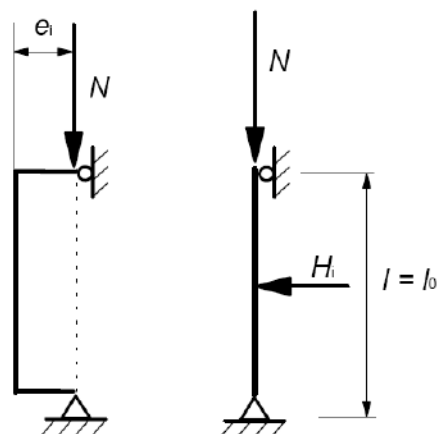
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a2) Braced

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### 13 Modification to 5.6.3

Paragraph (2), replace “In regions of yield hinges,  $x_u/d$  shall not” with “In region of yield hinges,  $x_u/d$  should not”.

### 14 Modifications to 5.8.6

Paragraph (3), replace “Expression (3.14) and 3.2.3 (Figure 3.8)” with “Expressions (3.14) and 3.2.7 (Figure 3.8)”.

Paragraph (3) replace in Expression (5.20) and in the Note “ $\gamma_{CE}$ ” with “ $\gamma_{CE}$ ”  
<https://standards.iteh.ai/catalog/standards/sist/d1cc84db-71cc-4511-9237-7c8ce419e474/sist-en-1992-1-1-2005-ac-2011>

### 15 Modification to 5.8.7.1

Paragraph (2), replace “as compared with 5.8.6 (2).” with “as compared with 5.8.5 (1).”.

### 16 Modification to 5.8.7.3

Paragraph (1), replace “moments resulting from a linear analysis, namely:” with “moments resulting from a first order analysis, namely:”.

### 17 Modification to 5.8.8.1

Paragraph (1), replace “(see also 5.8.5(4)).” with “(see also 5.8.5 (3)).”.

### 18 Modification to 5.8.8.2

Paragraph (2), replace “Differing first order end moments  $M_{01}$  and  $M_{02}$  may be” with “For members without loads applied between their ends, differing first order end moments  $M_{01}$  and  $M_{02}$  may be”.

### 19 Modification to 5.8.9

Paragraph (3) replace “and if the relative eccentricities  $e_y/h$  and  $e_z/b$  (see Figure 5.7) satisfy” with “and if the relative eccentricities  $e_y/h_{eq}$  and  $e_z/b_{eq}$  (see Figure 5.8) satisfy”.

**20 Modification to 5.10.2.1**

Paragraph (2), replace “the maximum prestressing force  $P_{\max}$  may be increased to  $k_3 \cdot f_{p0,1k}$  (e.g. for” with “the maximum prestressing force  $P_{\max}$  may be increased to  $k_3 \cdot f_{p0,1k} \cdot A_p$  (e.g. for”.

**21 Modification to 5.10.4**

Paragraph (1), replace in the Note “(see Annex D)” with “(see 10.3.2.1 and Annex D)”.

**22 Modification to 5.10.5.2**

Paragraph (4), replace in the Note “HPDE” with “HDPE”.

**23 Modifications to 5.10.6**

Paragraph (2), Formula (5.46), replace “ $I_c$ ” with “ $I_c$ ”.

Paragraph (2), replace:

“ $E_p$  is the modulus of elasticity for the prestressing steel, see 3.3.3 (9)”  
with:

“ $E_p$  is the modulus of elasticity for the prestressing steel, see 3.3.6 (2)”.

**24 Modification to 6.1**

Paragraph (5), replace “concentric loading ( $e/h < 0,1$ ), such” with “concentric loading ( $e_d / h \leq 0,1$ ), such”.

**25 Modification to 6.2.1**

Paragraph (5), replace “(see Expression (6.8)).” with “(see Expression (6.1)).”.

**26 Modification to 6.2.2**

Paragraph (1), replace:

“ $N_{Ed}$  is the axial ... for compression). The influence on  $N_E$  may be ignored.”  
with:

“ $N_{Ed}$  is the axial ... for compression). The influence on  $N_{Ed}$  may be ignored.”.

**27 Modifications to 6.2.3**

Paragraph (1), replace “the longitudinal tensile force due to shear defined in (3).” with “the longitudinal tensile force due to shear defined in (7).”.

Paragraph (5), replace “(e.g. for uniformly distributed loading) the shear reinforcement in any length increment  $l = z (\cot \theta + \cot \alpha)$  may be” with “(e.g. for uniformly distributed loading applied at the top) the shear reinforcement in any length increment  $l = z(\cot \theta)$  may be”.

Paragraph (6), replace “Where the web contains grouted ducts” with “Where the web contains grouted metal ducts”.

Paragraph (8), replace:

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“The value  $V_{Ed}$  calculated without reduction by  $\beta$ , should however always satisfy Expression (6.5).”

with:

“The value  $V_{Ed}$  calculated without reduction by  $\beta$ , should however always be less than  $V_{Rd,max}$ , see Expression (6.9).”

**28 Modification to 6.2.4**

Replace the title “Shear between web and flanges of T-sections” with “Shear between web and flanges”.

**29 Modification to 6.2.5**

Paragraph (2), replace:

“

- Very smooth: a surface cast against steel, plastic or specially prepared wooden moulds:  $c = 0,25$  and  $\mu = 0,5$
- Smooth: a slipformed or extruded surface, or a free surface left without further treatment after vibration:  $c = 0,35$  and  $\mu = 0,6$
- Rough: a surface with at least 3 mm roughness at about 40 mm spacing, achieved by raking, exposing of aggregate or other methods giving an equivalent behaviour:  $c = 0,45$  and  $\mu = 0,7$ ”

with the following:

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“

- Very smooth: a surface cast against steel, plastic or specially prepared wooden moulds:  $c = 0,025$  to  $0,10$  and  $\mu = 0,5$
- Smooth: a slipformed or extruded surface, or a free surface left without further treatment after vibration:  $c = 0,20$  and  $\mu = 0,6$
- Rough: a surface with at least 3 mm roughness at about 40 mm spacing, achieved by raking, exposing of aggregate or other methods giving an equivalent behaviour:  $c = 0,40$  and  $\mu = 0,7$ ”.

**30 Modification to 6.3.2**

Paragraph (4), replace:

“where  $\nu$  follows from 6.2.2 (6) and  $\alpha_c$  from Expression (6.9)”

with:

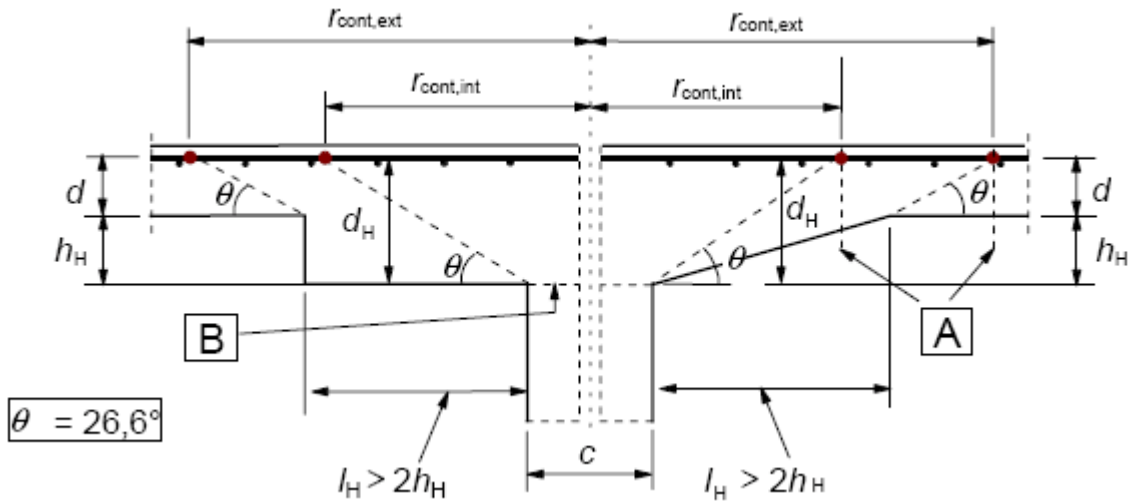
“where  $\nu$  follows from 6.2.2 (6) and  $\alpha_{cw}$  from Expression (6.9)”.

**31 Modification to 6.4.2**

Paragraph (11), replace Figure 6.18 with the following one:

”





**A** - basic control sections  
for circular columns

**B** - loaded area  $A_{load}$

Figure 6.18 — Slab with enlarged column head where  $l_H > 2(d + h_H)$ ".

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### 32 Modifications to 6.4.3

Paragraph (2), list entry (a), replace: [SIST EN 1992-1-1:2005/AC:2011](https://standards.iteh.ai/catalog/standards/sist/dfec84db-71e0-4511-9237-7c8ce419e474/sist-en-1992-1-1-2005-ac-2011)

$$V_{Ed} < V_{Rd,max}$$

with:

$$V_{Ed} \leq V_{Rd,max}$$

Paragraph (2), list entry (b), replace:

$$V_{Ed} < V_{Rd,c}$$

with the following:

$$V_{Ed} \leq V_{Rd,c}$$

Paragraph (3), Equation (6.40), replace " $W_i = \int_0^{u_i} |e| dl$ " with " $W_i = \int_0^{u_i} |e| dl$ ".

Paragraph (3), after Equation (6.42), replace:

"where  $D$  is the diameter of the circular column"

with:

"where  $D$  is the diameter of the circular column

$e$  is the eccentricity of the applied load  $e = M_{Ed} / V_{Ed}$ ".

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Paragraph (4), after Equation (6.45), replace “the eccentricity  $e$  should be measured from the centroid of the control perimeter” with “the distance  $e$  should be measured from the centroid axis of the control perimeter.”.

**33 Modification to 6.4.4**

Paragraph (2), replace in Equation (6.50) “ $\rho$ ” with “ $\rho_l$ ”.

**34 Modifications to 6.5.4**

Paragraph (6), replace “and (3.25) with  $\sigma_{Rd,max} \leq k_4 \nu' f_{cd}$  if for all three directions” with “and (3.25) with an upper limit  $\sigma_{Ed,max} \leq k_4 \nu' f_{cd}$  if for all three directions”.

Paragraph (9), replace “in accordance with 8.4.” with “in accordance with 8.3.”.

**35 Modification to 6.8.5**

Paragraph (3), replace in Equation (6.71) “ $\gamma_{s,fat}$ ” with “ $\gamma_{S,fat}$ ”.

**36 Modifications to 6.8.6**

Paragraph (1), replace:

“For welded reinforcing bars ...under frequent load combined with the basic...”

with:

“For welded reinforcing bars ...under frequent cyclic load combined with the basic...”.

Paragraph (2), replace “above verification may be carried out using the Frequent load” with “above verification may be carried out using the frequent load”.

**37 Modification to 7.2**

Paragraph (5), replace “Unacceptable cracking or deformation” with “For the appearance unacceptable cracking or deformation”.

**38 Modifications to 7.3.1**

Paragraph (5), replace “A limiting calculated crack width,  $w_{max}$ , taking into account” with “A limiting value,  $w_{max}$ , for the calculated crack width,  $w_k$ , taking into account”.

Paragraph (5), in Note 1 of Table 7.1N, replace “this limit is set to guarantee acceptable appearance. In the absence” with “this limit is set to give generally acceptable appearance. In the absence”.

**39 Modifications to 7.3.3**

Paragraph (2), in Note 1 of Table 7.2N, replace “ $h_{cr} = 0,5; (h-d) =$ ” with “ $h_{cr} = 0,5h; (h-d) =$ ”.

Paragraph (2), in Note 1 of Table 7.2N, replace “ $k' = 1,0$ ” with “ $k_4 = 1,0$ ”.

Paragraph (3), replace “or a suitable simplification (see 7.3.3 (2)) assuming pure tension” with “or a suitable simplification assuming pure tension”.

Paragraph (5) replace “detailing rules given in 9.2.2, 9.2.3, 9.3.2 and 9.4.4.3 are observed.” with “detailing rules given in 9.2.2, 9.2.3, 9.3.2 and 9.4.3 are observed.”.

#### 40 Modification to 7.3.4

Paragraph (3), replace Equation (7.13):

$$“k_2 = (\varepsilon_1 + \varepsilon_2) / 2\varepsilon_1”$$

with the following:

$$“k_2 = (\varepsilon_1 + \varepsilon_2) / (2\varepsilon_1)”.$$

#### 41 Modification to 7.4.2

Paragraph (2), replace:

$$“\rho_0 \text{ is the reference reinforcement ratio} = \sqrt{f_{ck}} 10^{-3}”$$

with:

$$“\rho_0 \text{ is the reference reinforcement ratio} = 10^{-3} \sqrt{f_{ck}} ”.$$

#### 42 Modification to 7.4.3

Paragraph (5), replace:

“ $\varphi(\infty, t_0)$  is the creep coefficient relevant for the load and time interval (see 3.1.3)”

with:

“ $\varphi(\infty, t_0)$  is the creep coefficient relevant for the load and time interval (see 3.1.4)”.

#### 43 Modification to 8.3

Paragraph (2), in the Note of Table 8.1N, replace “in accordance with prEN ISO 17660 Annex B” with “in accordance with EN ISO 17660, Annex B”.

#### 44 Modification to 8.4.1

Paragraph (2), replace Figure 8.1 a) with the following one:

”

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