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EN 1998-3:2005/AC

NORME EUROPÉENNE

March 2010

EUROPÄISCHE NORM

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März 2010

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English version
Version Française
Deutsche Fassung

**Eurocode 8: Design of structures for earthquake resistance - Part 3:
Assessment and retrofitting of buildings**

**Eurocode 8: Calcul des structures pour leur
résistance aux séismes - Partie 3:
Evaluation et renforcement des bâtiments**

**Eurocode 8: Auslegung von Bauwerken
gegen Erdbeben - Teil 3: Beurteilung und
Ertüchtigung von Gebäuden**

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

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

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



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

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Ref. No.: EN 1998-3:2005/AC:2010 D/E/F

1) Modification to "National annex for EN 1998-3"

Last paragraph, bottom of the table, add the following rows:

"

A.4.4.2(5)	Partial factor γ_{fd} for FRP debonding
A.4.4.2(9)	Partial factor γ_{fd} of the FRP

".

2) Modification to 2.1

Paragraph (2)P, NOTE, replace "the Limit States will be checked in a country" with "the Limit States to be checked in a country".

3) Modification to 4.4.2

Paragraph (1)P, replace "of a braced frame, etc.) and by ρ_{\max} and ρ_{\min} " with "of a braced frame, etc.) and by ρ_{\max} and ρ_{\min} ".

4) Modification to 4.6

Paragraph (1)P, Table 4.3, 3rd row ("Type of element or mechanism (e/m)/Ductile"), 6th column ("Nonlinear Model/Capacity"), replace "In terms of strength. Use mean values of properties divided by CF and by partial factor." with "In terms of deformation. Use mean values of properties divided by CF.".

5) Modifications to A.3.2.2

Paragraph (1), replace:

$$\theta_{um} = \frac{1}{\gamma_{el}} 0,016 \cdot (0,3^v) \left[\frac{\max(0,01; \omega)}{\max(0,01; \omega)} f_c \right]^{0,225} \left(\frac{L_v}{h} \right)^{0,35} 25^{\left(\alpha \rho_{sx} \frac{f_{yw}}{f_c} \right)} (1,25^{100 \rho_d}) \quad (A.1)"$$

with:

$$\theta_{um} = \frac{1}{\gamma_{el}} 0,016 \cdot (0,3^v) \left[\frac{\max(0,01; \omega)}{\max(0,01; \omega)} f_c \right]^{0,225} \left(\min \left(9; \frac{L_v}{h} \right) \right)^{0,35} 25^{\left(\alpha \rho_{sx} \frac{f_{yw}}{f_c} \right)} (1,25^{100 \rho_d}) \quad (A.1)".$$

Paragraph (1), 2nd paragraph before paragraph (2), replace "expression (A.1) is divided by 1,6." with "expression (A.1) is multiplied by 0,58.".

Paragraph (2), replace:

$$\theta_{um}^{pl} = \theta_{um} - \theta_y = \frac{1}{\gamma_{el}} 0,0145 \cdot (0,25^\nu) \left[\frac{\max(0,01; \omega)}{\max(0,01; \omega)} \right]^{0,3} \cdot f_c^{0,2} \cdot \left(\frac{L_V}{h} \right)^{0,35} 25^{\left(\alpha \rho_{sx} \frac{f_{yw}}{f_c} \right)} (1,275^{100 \rho_d}) \quad (A.3)''$$

with:

$$\theta_{um}^{pl} = \theta_{um} - \theta_y = \frac{1}{\gamma_{el}} 0,0145 \cdot (0,25^\nu) \left[\frac{\max(0,01; \omega)}{\max(0,01; \omega)} \right]^{0,3} \cdot f_c^{0,2} \cdot \left(\min \left(9; \frac{L_V}{h} \right) \right)^{0,35} 25^{\left(\alpha \rho_{sx} \frac{f_{yw}}{f_c} \right)} (1,275^{100 \rho_d}) \quad (A.3)''.$$

Paragraph (3), replace "(A.1) and (A.3) are multiplied by 0,825" with "(A.1) and (A.3) are divided by 1.2".

Paragraph (5), replace "multiplied by 0,575, while the" with "multiplied by 0,8, while the".

Paragraph (5), replace "multiplied by 0,375 (with these factors including the reduction factor 0,825 of (3) accounting for the lack" with "multiplied by 0,75 (with these factors including the reduction factor 1,2 of (3) accounting for the lack".

Paragraph (5), final two-entry list, 2nd entry, replace "accordance with (1) multiplied by 0,0025 (180 + min(50, l_o/d_{bL}))(1- l_o/L_V), while the" with "accordance with (1) and (3) multiplied by 0,019 (10 + min(40, l_o/d_{bL})), while the".

Paragraph (5), final two-entry list, 2nd entry, replace "accordance with (2) multiplied by 0,0035 (60 + min(50, l_o/d_{bL}))(1- l_o/L_V)" with "accordance with (2) and (3) multiplied by 0,019 min(40, l_o/d_{bL})".

6) Modifications to A.3.2.4

Paragraph (2), Equation (A.10a), replace " $\theta_y = \phi_y \frac{L_V + a_v z}{3} + 0,00135 \left(1 + 1,5 \frac{h}{L_V} \right) + \frac{\varepsilon_y}{d - d'} \frac{d_b f_y}{6 \sqrt{f_c}}$ "

with " $\theta_y = \phi_y \frac{L_V + a_v z}{3} + 0,0014 \left(1 + 1,5 \frac{h}{L_V} \right) + \frac{\varepsilon_y}{d - d'} \frac{d_b f_y}{6 \sqrt{f_c}}$ ".

Paragraph (2), Equation (A.11a), replace " $\theta_y = \phi_y \frac{L_V + a_v z}{3} + 0,002 \left(1 - 0,135 \frac{L_V}{h} \right) + \frac{\varepsilon_y}{d - d'} \frac{d_b f_y}{6 \sqrt{f_c}}$ "

with " $\theta_y = \phi_y \frac{L_V + a_v z}{3} + 0,0013 + \frac{\varepsilon_y}{d - d'} \frac{d_b f_y}{6 \sqrt{f_c}}$ ".

Paragraph (2), Equation (A.10b), replace " $\theta_y = \phi_y \frac{L_V + a_v z}{3} + 0,0013 \left(1 + 1,5 \frac{h}{L_V} \right) + 0,13 \phi_y \frac{d_b f_y}{\sqrt{f_c}}$ "

with " $\theta_y = \phi_y \frac{L_V + a_v z}{3} + 0,0014 \left(1 + 1,5 \frac{h}{L_V} \right) + \phi_y \frac{d_b f_y}{8 \sqrt{f_c}}$ ".

Paragraph (2), Equation (A.11b), replace " $\theta_y = \phi_y \frac{L_V + a_V z}{3} + 0,002 \left(1 - 0,125 \frac{L_V}{h} \right) + 0,13 \phi_y \frac{d_b f_y}{\sqrt{f_c}}$ "

with " $\theta_y = \phi_y \frac{L_V + a_V z}{3} + 0,0013 + \phi_y \frac{d_{bL} f_y}{8 \sqrt{f_c}}$ ".

Paragraph (2), under Equation (A.11b), first line of the definition of " α_{Vz} ", replace " α_{Vz} " with " $a_V z$ ".

Paragraph (2), under Equation (A.11b), definition of " α_{Vz} ", first line of the sub-definition of " α_V ", replace " α_V " with " a_V ".

Paragraph (2), under Equation (A.11b), definition of " α_{Vz} ", last line of the sub-definition of " $\alpha_V=1$ ", replace "(i.e. if $M_y < L_V V_{R,c}$) $\alpha_V=0$," with "(i.e. if $M_y < L_V V_{R,c}$) $a_V=0$ ".

7) Modifications to A.4.2.2

Paragraph (2), delete:

"If measures to connect the jacket to the old concrete include roughening of the interface:"

Paragraph (2), delete:

"For all other types of measures to connect the jacket to the old concrete, or if no special measures are taken:

$$\theta_y^* = 1,2 \theta_y \quad (\text{A.19b}).$$

8) Modifications to A.4.3.2

Paragraph (2), Equation (A.21), replace " $V_j = 0,5 \frac{2t_j b}{s} f_{yj,d} \cdot \frac{1}{\cos \alpha}$ " with

$$V_j = 0,5 h \frac{2t_j b}{s} f_{yj,d} \cdot (\cot \theta + \cot \beta) \cdot \sin \beta.$$

Paragraph (2), after Equation (A.21), immediately under "where:", add the following line:

" h is the depth of the cross-section,".

Paragraph (2), after Equation (A.21), definition of " b ", delete the last word "and".

Paragraph (2), after Equation (A.21), definition of " s ", delete the last word "and".

Paragraph (2), after Equation (A.21), just under the definition of " s ", add the following lines:

" θ is the strut inclination angle,

β is the angle between the axis of the steel straps and the axis of the member ($\beta = 90^\circ$, in case of continuous steel plates), and".

9) Modifications to A.4.4.3

Paragraph (4), replace "rounded to allow wrapping" with "rounded to a radius R to allow wrapping".

Paragraph (4), replace "with $k_s = 2R_c/D$ and $f_1 = 2$ " with "with $k_s = 2R/D$ and $f_1 = 2$ ".

10) Modification to A.4.4.4

Paragraph (3), list entry b)), replace "FRP alone, with $\alpha_{i,i}=4/n_{tot}$ and $\rho_i, f_{i,e}, n_{tot}$ as defined in A.4.4.3(6) for the FRP." with "FRP alone, with $\alpha_{i,i}=\alpha(4/n_{tot})$ and $\rho_i, f_{i,e}, \alpha, n_{tot}$ as defined in A.4.4.3(6) for the FRP."

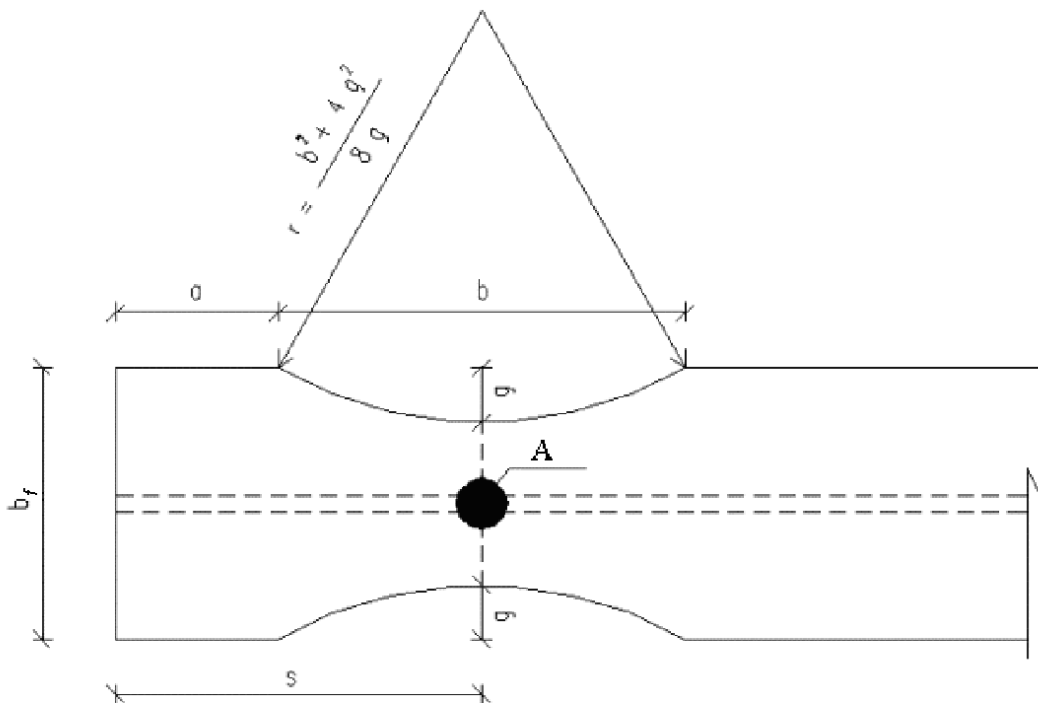
11) Modification to B.5.1

Paragraph (1), replace "should develop full their plastic moments" with "should develop their full plastic moments".

12) Modifications to B.5.3.4

Paragraph (3), subparagraph ii., Figure B.1, replace the figure with the following one:

"



".

Paragraph (3), subparagraph vii., replace "cut-depth c and repeat steps (iv) to (vi). The length g should be" with "cut-depth g and repeat steps (iv) to (vi). The length b should be".

13) Modification to B.5.4.2

Paragraph (3), replace " $(A_a f_{yd} + A_{cd} f_{cd} + A_{sd} f_{sd})$ at the DL LS" with " $(A_a f_{yd} + A_{cd} f_{cd} + A_{sd} f_{sd})$ (see EN 1998-1:2004, 7.6.4(2)) at the DL LS".

14) Modifications to B.6.2.3.1

Paragraph (5), subparagraph vi., Equation (B.34), replace with

$$d_c \cdot t_{wc} \cdot \frac{f_{yw,d}}{\sqrt{3}} \geq \frac{\sum Z_b \cdot f_{yb}}{d_b} \cdot \left(\frac{L - d_c}{L - d_c - 2 \cdot b} \right) \cdot \left(\frac{H - d_b}{H} \right)$$

$$d_{wc} \cdot t_{wc} \cdot \frac{f_{yw,d}}{\sqrt{3}} \geq \frac{\sum Z_b \cdot f_{yb}}{d_b} \cdot \left(\frac{L - d_c}{L - d_c - 2 \cdot b} \right) \cdot \left(\frac{H - d_b}{H} \right)$$

Paragraph (5), subparagraph vi., under Equation (B.34), replace:

" d_c is the depth of the column web,"

with:

" d_{wc} is the depth of the column web,".

15) Modifications to C.4.2.1

Paragraph (3), replace "unreinforced masonry wall as controlled by" with "unreinforced masonry wall controlled by".

Paragraph (3), last line, replace "the appropriate knowledge level), t is the wall" with "the appropriate knowledge level m), t is the wall".