

EUROPEAN STANDARD

**EN 1992-1-2:2004/AC**

NORME EUROPÉENNE

July 2008

EUROPÄISCHE NORM

Juillet 2008

Juli 2008

---

ICS 91.010.30; 91.080.10

English version  
Version Française  
Deutsche Fassung

Eurocode 2: Design of concrete structures - Part 1-2: General rules -  
Structural fire design

Eurocode 2: Calcul des structures en béton  
- Partie 1-2: Règles générales - Calcul du  
comportement au feu

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

This corrigendum becomes effective on 30 July 2008 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 30 juillet 2008 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 30. Juli 2008 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.



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

**Management Centre: rue de Stassart, 36 B-1050 Brussels**

---

© 2008 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.  
Tous droits d'exploitation sous quelque forme et de quelque manière que ce soit réservés dans le monde entier aux membres nationaux du CEN.  
Alle Rechte der Verwertung, gleich in welcher Form und in welchem Verfahren, sind weltweit den nationalen Mitgliedern von CEN vorbehalten.

Ref. No.: EN 1992-1-2:2004/AC:2008 D/E/F

**Rakennustuoteteollisuus. Käyttö sallittu vain standardien laadintaan. 26.02.2009**

## Introduction

### Page 3

*In the Content List, replace:*

“5.3.2 Method A for assessing fire resistance of columns”

*with the following:*

“5.3.2 Method A”.

*In the Content List, replace:*

“5.3.3 Method B for assessing fire resistance of columns”

*with the following:*

“5.3.3 Method B”.

*In the Content List, replace:*

“5.4.1 Non load bearing walls (partitions)”

*with the following:*

“5.4.1 Non load bearing compartmentation walls”.

### Page 9

*In Figure 1, replace:*

“Simple Calculation Models”

*with the following:*

“Simplified Calculation Models”

(4 occurrences).

*In Table 0.1 replace in 3<sup>rd</sup> row 1<sup>st</sup> column:*

**“Analysis of parts of the structure**

Analysis of parts of the structure Indirect fire actions within the subassembly are considered...”

*with the following:*

**“Analysis of part of the structure**

Indirect fire actions within the subassembly are considered...”.

## SECTION 1 GENERAL

### **Page 11**

*In 1.3 replace:*

“The general assumptions given in EN 1990 and EN 1992-1-2 apply.”

*with the following:*

“The general assumptions given in EN 1990 and EN 1992-1-1 apply.”.

### **Page 12**

*In 1.5.6 replace:*

“...It is obtained from the residual cross section by removing parts of the...”

*with the following:*

“...It is obtained by removing parts of the...”.

### **Page 13**

*In 1.6.1 replace:*

“*t* time of fire exposure (min)”

*with the following:*

“*t* time in fire exposure (min)”.

## SECTION 2 BASIS OF DESIGN

### **Page 14**

*In 2.1.1 (1)P replace:*

“...during the relevant fire exposure.”

*with the following:*

“...during the required time of fire exposure.”.

*In 2.1.1 (2)P replace:*

“...during the relevant fire exposure.”

*with the following:*

“...during the required time of fire exposure.”.

*In 2.1.2 (4) replace:*

“With the external fire exposure curve the same criteria (R, E, I) should apply, however the reference to this specific curve should be identified by the letters "ef" (see EN 1991-1-2).”

*with the following:*

“With the external fire exposure curve (see EN 1991-1-2) the same criteria (R, E, I) should apply, however the reference to this specific curve should be identified by the letters "ef".”.

*In 2.1.2(5) replace:*

“With the hydrocarbon fire exposure curve the same criteria (R, E, I) should apply, however the reference to this specific curve should be identified by the letters "HC", see EN 1991-1-2.”

*with the following:*

“With the hydrocarbon fire exposure curve (see EN 1991-1-2) the same criteria (R, E, I) should apply, however the reference to this specific curve should be identified by the letters "HC".”.

### **Page 15**

*Change 2.1.3 (1):*

“(1) The load bearing function should...”

*to a principle:*

“(1)P The load bearing function shall...”.

### **Page 16**

*In 2.4.1 (2)P replace:*

“It shall be verified for the relevant duration of fire exposure  $t$  :”

*with the following:*

“It shall be verified for the specified duration of fire exposure  $t$  :”.

## **SECTION 3 MATERIAL PROPERTIES**

### **Page 25**

*In 3.2.4 (1) replace:*

“...properties of prestressing steel at elevated temperatures may be obtained by the same...”

*with the following:*

“...properties of prestressing steel at elevated temperatures should be obtained by the same...”.

**Page 28**

*In 3.4 (1) replace:*

“for  $860^{\circ}\text{C} < \theta \leq 120^{\circ}\text{C}$ ”

*with the following:*

“for  $860^{\circ}\text{C} < \theta \leq 1\,200^{\circ}\text{C}$ ”.

## SECTION 4 DESIGN PROCEDURES

**Page 31**

*In 4.2.3 (1) in the Note replace:*

“...The method described in Annex B.2 is based on the principle that the fire damaged cross-section is reduced by ignoring a damaged zone at the fire-exposed surfaces.”

*with the following:*

“...The method described in Annex B.2 is based on the principle that cross-section is reduced by ignoring an ineffective zone at the fire-exposed surfaces.”.

**Page 34**

*In 4.3.1 (2)P replace:*

“...(e.g. insufficient rotational capacity,...”

*with the following:*

“...(e.g. insufficient rotation capacity,...”.

**Page 35**

*In 4.3.3 (6) replace:*

“...sub-assemblies...”

*with the following:*

“...parts of the structure...”.

*In 4.3.3 (9) replace:*

“...sub-assemblies...”

*with the following:*

“...parts of the structure...”.

**Page 37**

*In 4.6 (4) replace:*

“...(see 4.2)...”

*with the following:*

“...(see 5)...”.

## SECTION 5 TABULATED DATA

### Page 42

In 5.3.2 (2) in the Note 1 replace:

“The value of  $e_{\max}$ , within limits  $0,15h$  (or  $b$ )  $\leq e_{\max} \leq 0,4h$  (and  $b$ ), ...The recommended value is  $0,15h$  (and  $b$ ).”

with the following:

“The value of  $e_{\max}$ , within limits  $0,15h$  (or  $b$ )  $\leq e_{\max} \leq 0,4h$  (or  $b$ ), ...The recommended value is  $0,15h$  (or  $b$ ).”

### Page 43

In 5.3.2 (3) replace:

“A reduction factor for the design load level in the fire situation,  $\mu_{fi}$ , has been introduced.”

with the following:

“Degree of utilization in the fire situation,  $\mu_{fi}$ , has been introduced in Table 5.2a.”

In 5.3.2 (3) in Table 5.2a in the last row replace:

“For prestressed columns the increase of axis distance according to 4.2.2. (4) should be noted.”

with the following:

“For prestressed columns the increase of axis distance according to 5.2 (5) should be noted.”

### Page 46

Replace the title of sub-clause 5.4.1:

“5.4.1 Non load-bearing walls (partitions)”

with the following:

“5.4.1 Non load-bearing compartmentation walls”.

In 5.4.1 (1) replace:

“Where the fire resistance of a partition...”

with the following:

“Where the fire resistance of a wall...”.

In 5.4.2 (3) add the following note:

“NOTE Ratio of clear height of wall to wall thickness is limited to 40 in 5.4.1 (3). Clear height of wall includes limitation that Tabulated data for walls is valid for braced structures only, see corresponding limitation for columns in 5.3.1.”.

### Page 47

In 5.4.2 (3) replace the title of Table 5.4:

“Table 5.4: Minimum dimensions and axis distances for load-bearing reinforced concrete walls”

with the following:

“Table 5.4 - Minimum dimensions and axis distances for load-bearing concrete walls”.

**Page 48**

*In 5.6.1 (5) replace:*

“...of I-shaped beams with varying webs (Figure 5.4c) should not be less than:”

*with the following:*

“...of I-shaped beams (Figure 5.4c) should not be less than:”.

*In 5.6.1 (5) replace:*

“where  $b_{\min}$  is the minimum value of beam width according to Table 5.7.”

*with the following:*

“where  $b_{\min}$  is the minimum value of beam width according to Table 5.5.”.

**Page 55**

*In 5.7.3 (2) replace:*

“Table 5.8 and the following rules apply for slabs where the longitudinal moment redistribution...”

*with the following:*

“Table 5.8 and the following rules apply for slabs where the moment redistribution...”.

**Page 56**

*In 5.7.4 (1) replace:*

“...according to Section 2 of EN 1992-1-1,...”

*with the following:*

“...according to Section 5 of EN 1992-1-1,...”.

**Page 57**

*In 5.7.5 (7) in Table 5.10 and in Table 5.11 replace:*

“For prestressed ribbed slabs, the axis-distance  $a$  should be increased in accordance with 5.2(4).”

*with the following:*

“For prestressed ribbed slabs, the axis-distance  $a$  should be increased in accordance with 5.2 (5).”.

## **SECTION 6 HIGH STRENGTH CONCRETE (HSC)**

**Page 59**

*In 6.2 (2) replace:*

“For concrete grades  $80/95 < C \leq 90/105$  spalling can occur in any situation for concrete exposed directly to the fire and at least one of the following methods should be provided:”

*with the following:*

“For concrete grades  $80/95 < C \leq 90/105$  at least one of the following methods should be provided:”.

**Page 60**

*In 6.4.2.1 (2) replace:*

“...fire damaged concrete..”

*with the following:*

“...ineffective concrete...”.

*In 6.4.2.1 (3) replace:*

“...effective cross section..”

*with the following:*

“...reduced cross section...”.

**Page 61**

*In 6.4.2.2 (1) replace:*

“...effective cross section..”

*with the following:*

“...reduced cross section...”.

*In 6.4.2.2 (2) replace:*

“...effective cross section..”

*with the following:*

“...reduced cross section...”.

## **ANNEX A TEMPERATURE PROFILES**

**Page 63**

*In paragraph (2) replace:*

“ - Convection factor is 25”

*with the following:*

“ - Convection factor is 25 W/m<sup>2</sup>K”.

## **ANNEX B SIMPLIFIED CALCULATION METHODS**

**Page 72**

*In B.1.1 (5) replace:*

“...effective cross section..”

*with the following:*

“...reduced cross section...”.



**Page 74**

*In B.1.2 (2) replace:*

“...effective cross section..”

*with the following:*

“...reduced cross section...”

(2 occurrences).

*In B.1.2 (2) in Figure B.2 replace:*

“  $F$  is the total force in compressed reinforcement in the fire situation, and is equal to part of the total force in the tensed reinforcement”

*with the following:*

“  $F_S$  is the total force in compressed reinforcement in the fire situation, and it is equal to part of the total force in the tensed reinforcement”.

**Page 75**

*In B.1.2 (3) replace:*

“...in calculating the axis distance,  $a$  (see Figure B.2).”

*with the following:*

“...in calculating the axis distance,  $a$ .”

*In B.1.2 (4) replace:*

“The axis distance,  $a$ , from bottom surface of the effective cross-section to the centroid of the reinforcement layers may be calculated using Expression (B.2).”

*with the following:*

“The axis distance,  $a$ , to the centroid of the reinforcement layers may be calculated using Expression (B.2).”.

*In B.1.2 (4) replace:*

“... $a_v$  is the axis distance from the bottom surface of the effective cross-section to reinforcement layer  $v$ ”

*with the following:*

“... $a_v$  is the axis distance from the bottom surface of the reduced cross-section to reinforcement layer  $v$ ”.

*In B.1.2 (6) replace:*

“If the reinforcement bars have different areas and are distributed arbitrary the following procedure must be used.”

*with the following:*

“If the reinforcement bars have different areas and are distributed arbitrary the following procedure should be used.”.

*In B.1.2 (6) replace:*

“The axis distance,  $a$  (see Figure B.2), from the effective cross-section to the centroid of the reinforcement group is calculated in accordance with Expression (B.5).”

*with the following:*

“The axis distance,  $a$  to the centroid of the reinforcement group is calculated in accordance with Expression (B.5).”.

**Page 76**

*In B.1.2 (6) replace:*

“ $a_i$  is the axis distance from effective cross-section to reinforcement bar  $i$ ”

*with the following:*

“ $a_i$  is the axis distance from reduced cross-section to reinforcement bar  $i$ .”.

*In B.2 (1) replace:*

“The method is applicable to the standard temperature-time curve only.”

*with the following:*

“The method is applicable to any fully developed fire curve, but data are only provided in this code for the standard temperature-time curve.”.

*In B.2 (3) replace:*

“...(see Figure B.3 (c)). This is represented by a wall with a width equal to  $2w$  (see Figure B.3 (d)). The flange of Figure B.3 (f) is related to the equivalent wall in Figure B.3 (d), and the web to the equivalent wall in Figure B.3 (a).”

*with the following:*

“...(see Figure B.3 (c)). A thick wall is represented by a wall with a width equal to  $2w$  (see Figure B.3 (d)). The flange of Figure B.3 (f) is related to the equivalent slab in Figure B.3 (c), and the web to the equivalent wall in Figure B.3 (a).”.

**Page 78**

*In B.2 (7) replace:*

“The width of the damaged zone for beams, slabs or members in plane shear may be calculated...”

*with the following:*

“The width of the damaged zone for beams, slabs or plates may be calculated...”.

*In B.2 (8) replace:*

“For columns, walls and other constructions where second order effects may be calculated using Expression (B.13).”

*with the following:*

“For columns, walls and other constructions, where second order effects take place, the width of the damaged zone may be calculated using Expression (B.13).”.

**Page 80**

*In B.3.1 (3) replace:*

“...(see Section 5 of EN 1992-1) if...”

*with the following:*

“...(see Section 5 of EN 1992-1-1) if...”.

*In B.3.1 (5) replace:*

“...For a more accurate estimation the increase of the relative reaction at the ends of the column, due to the decrease of its stiffness...”

*with the following:*

“...For a more accurate estimation the increase of the relative restraint at the ends of the column, due to the decrease of its stiffness...”.

## **ANNEX D CALCULATION METHODS FOR SHEAR, TORSION AND ANCHORAGE**

**Page 92**

*In D.1 (3) replace:*

“...the actual shear behaviour of the concrete at elevated temperatures must be considered.”

*with the following:*

“...the actual shear behaviour of the concrete at elevated temperatures needs to be considered.”.

**Page 94**

*In D.3 (7) in the caption of Figure D.2 replace:*

“...EN 1992-1...”

*with the following:*

“...EN 1992-1-1...”.