CYS National Annex to CYS EN 1994-1-2:2005

Eurocode 4:

Design of Composite steel and concrete structures

Part 1-2: General rules – Structural fire design

Prepared by

Eurocodes Committee, Scientific and Technical

Chamber of Cyprus under a Ministry of Interior's Programme

NATIONAL ANNEX

TO

CYS EN 1994-1-2: 2005 Eurocode 4: Design of Composite steel and concrete structures

Part 1-2: General rules – Structural fire design

This National Annex has been approved by the Board of Governors of the Cyprus Organisation for Standardisation on 11/06/2010.

INTRODUCTION

This National Annex has been prepared by the Eurocodes Committee of the Technical Chamber of Cyprus which was commissioned by the Ministry of Interior of the Republic of Cyprus.

NA 1 SCOPE

This National Annex is to be used together with CYS EN 1994-1-2: 2005.

This National Annex gives:

(a) Nationally determined parameters for the following clauses of CYS EN 1994-1-2: 2004 where National choice is allowed (see Section NA 2):

- **1.1** (16)
- **2..1.3** (2)
- **2.3** (1) P
- **2.3** (2) P
- **2.4.2** (3)
- **3.3.2** (9)
- **4.1** (1) P
- **4.3.5.1** (10)

(b) Decisions of the use of the Informative Annex A, B, C, D, E, F and G (see section NA3).

(c) References to non-contradictory complementary information to assist the user to apply CYS EN 1994-1-2: 2004 (see Section NA 4).

NA 2 NATIONALLY DETERMINED PARAMETERS

NA 2.1 Clause 1.1(16) General scope:

No further information concerning the decision to use of Concrete Strength Class higher than C50/60 is provided in this National Annex.

NA 2.2 Clause 2.1.3 (2): Parametric fire exposure.

The recommended values for $\Delta\theta_1$ and $\Delta\theta_2$ are $\Delta\theta_1$=200K and $\Delta\theta_2$=240K.

NA 2.3 Clause 2.3.1 (P): Design values of materials or material properties.

The recommended value for mechanical of steel and concrete of the partial factor for the fire situation are $\gamma_{M,fi,a}$=1.0, $\gamma_{M,fi,s}$=1.0, $\gamma_{M,fi,c}$=1.0 and $\gamma_{M,fi,v}$=1.0.

NA 2.4 Clause 2.3.2 (P) : Design values of thermal properties material.

The recommended value for thermal properties of steel and concrete for the fire situation is $\gamma_{M,fi}$=1.0.

NA 2.5 Clause 2.4.2.3 Member Analysis

The recommended value for γ_G is 1.35 and the recommended value for γ_Q is 1.5. As a simplification the recommended value of η_{fi} is 0.65 except for imposed loads where the recommended value is 0.7.

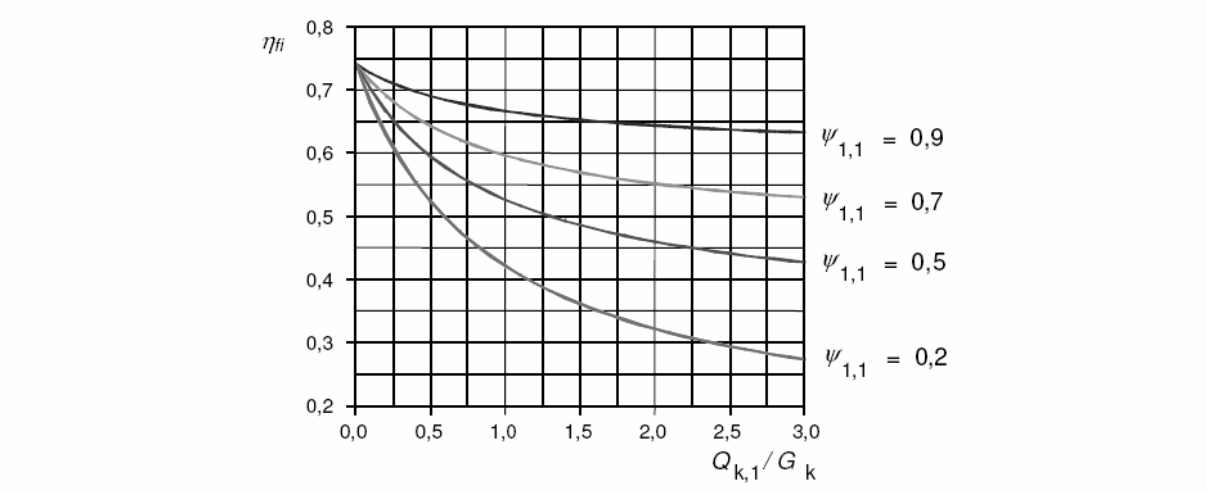

Figure 2.1 (CYS): Variation of the reduction factor η_s with the load ratio $Q_{k,1}/G_k$

NA 2.6 Clause 3.3.2(9) Normal Weight Concrete

The use of the upper limit of λc, thermal conductivity of normal weight concrete is recommended.

NA 2.7 Clause 4.1(1) P Design procedures.

No further information concerning the decision to use advanced calculation model is provided in this National Annex.

NA 2.8 Clause 4.3.5.1 (10) Composite column, structural behaviour.

The recommended values for L_{ei} and L_{et} are L_{ei} =0.5 times the system length L and L_{et}=0.7 times the system length L.

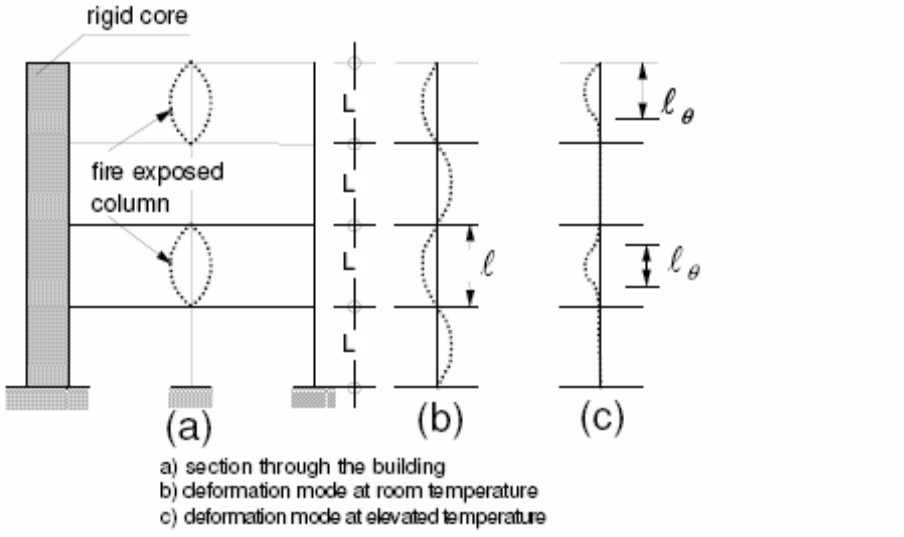

Figure 4.6 (CYS): Structural behaviour of columns in braced frames

NA 3 Guidance on using Informative Annexes A, B, C, D, E, F and G

NA 3.1 Annex A

Annex A may be used.

NA 3.2 Annex B

Annex B may be used.

NA 3.3 Annex C

Annex C may be used.

NA 3.4 Annex D

Annex D may be used.

NA 3.5 Annex E

Annex E may be used.

NA 3.6 Annex F

Annex F may be used.

NA 3.7 NA 4 Annex G

Annex G may be used.

NA 4 References to Non-Contradictory Complementary Information

None.

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