NATIONAL ANNEX

TO

CYS EN 1993-1-3:2006

Eurocode 3: Design of steel structures

Part1-3: General rules - Supplementary rules for cold-formed members and sheeting

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Period of Enquiry

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Readers are advised that this is a draft document and subject to change

Prepared by: Eurocodes Committee
Ministry of Interior / Technical Chamber of Cyprus

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 in conjunction with CYS EN 1993-1-3:2006.

This National Annex gives:

(a) Nationally Determined Parameters described in the following clauses of CYS EN 1993-1-3:2006 (see Section NA 2):

- 2 (3)P
- 2 (5)
- 3.1 (3) Note 1 and Note 2
- 3.2.4 (1)
- 5.3 (4)
- 8.3 (5)
- 8.3 (13), Table 8.1
- 8.3 (13), Table 8.2
- 8.3 (13), Table 8.3
- 8.3 (13), Table 8.4
- 8.4 (5)
- 8.5.1 (4)
- 9 (2)
- 10.1.1 (1)
- 10.1.4.2 (1)
- A.1 (1), Note 2
- A.1 (1), Note 3
- A.6.4 (4)
- E (1)

(b) Decisions on the use of CYS EN 1993-1-3:2006 informative annexes (see Section NA 3)

(c) References to non-contradictory complementary information to assist the user to apply CYS EN 1993-1-3:2006 (see Section NA 4)

NA 2 NATIONALLY DETERMINED PARAMETERS

NA 2.1 Clause 2 (3) P Basis of design

The following recommended values for the partial factors γ_{Mi} for buildings should be used:

$\gamma_{M0} = 1,00$;
$\gamma_{M1} = 1,00$;
$\gamma_{M2} = 1,25$.

Public Enquiry Draft

NA 2.2 Clause 2 (5) Basis of design

The recommended value of $\gamma_{M,ser}$=1,00 should be used.

NA 2.3 Clause 3.1 (3) Note 1 and Note 2 General

For steel strip less than 3 mm thick conforming to CYS EN 10025, if the width of the original strip is greater than or equal to 600 mm, the characteristic values should be equal to 0,9 times those given in Table NA1 (Table 3.1a of CYS EN 1993-1-3).

Examples for other steel materials and products that may conform to the requirements of this standard are given in Table NA2 (Table 3.1b of CYS EN 1993-1-3).

Table NA1: Nominal values of basic yield strength f_{yb} and ultimate tensile strength f_u (Table 3.1a of CYS EN 1993-1-3)

Type of steel	Standard	Grade	f_{yb} N/mm^2	f_u N/mm^2
Hot rolled products of non-alloy structural steels. Part 2: Technical delivery conditions for non alloy structural steels	EN 10025: Part 2	S 235 S 275 S 355	235 275 355	360 430 510
Hot-rolled products of structural steels. Part 3: Technical delivery conditions for normalized/normalized rolled weldable fine grain structural steels	EN 10025: Part 3	S 275 N S 355 N S 420 N S 460 N S 275 NL S 355 NL S 420 NL S 460 NL	275 355 420 460 275 355 420 460	370 470 520 550 370 470 520 550
Hot-rolled products of structural steels. Part 4: Technical delivery conditions for thermomechanical rolled weldable fine grain structural steels	EN 10025: Part 4	S 275 M S 355 M S 420 M S 460 M S 275 ML S 355 ML S 420 ML S 460 ML	275 355 420 460 275 355 420 460	360 450 500 530 360 450 500 530

Table NA2: Nominal values of basic yield strength f_{yb} and ultimate tensile strength f_u (Table 3.1b of CYS EN 1993-1-3)

Cold reduced steel sheet of structural quality	ISO 4997	CR 220 CR 250 CR 320	220 250 320	300 330 400
Continuous hot dip zinc coated carbon steel sheet of structural quality	EN 10326	S220GD+Z S250GD+Z S280GD+Z S320GD+Z S350GD+Z	220 250 280 320 350	300 330 360 390 420
Hot-rolled flat products made of high yield strength steels for cold forming. Part 2: Delivery conditions for thermomechanically rolled steels	EN 10149: Part 2	S 315 MC S 355 MC S 420 MC S 460 MC S 500 MC S 550 MC S 600 MC S 650 MC S 700 MC	315 355 420 460 500 550 600 650 700	390 430 480 520 550 600 650 700 750
	EN 10149: Part 3	S 260 NC S 315 NC S 355 NC S 420 NC	260 315 355 420	370 430 470 530
Cold-rolled flat products made of high yield strength micro-alloyed steels for cold forming	EN 10268	H240LA H280LA H320LA H360LA H400LA	240 280 320 360 400	340 370 400 430 460
Continuously hot-dip coated strip and sheet of steels with higher yield strength for cold forming	EN 10292	H260LAD H300LAD H340LAD	240 2) 280 2) 320 2)	340 2) 370 2) 400 2)

Public Enquiry Draft

		H380LAD H420LAD	360 2) 400 2)	430 2) 460 2)
Continuously hot-dipped zinc-aluminium (ZA) coated steel strip and sheet	EN 10326	S220GD+ZA S250GD+ZA S280GD+ZA S320GD+ZA S350GD+ZA	220 250 280 320 350	300 330 360 390 420
Continuously hot-dipped aluminium-zinc (AZ) coated steel strip and sheet	EN 10326	S220GD+AZ S250GD+AZ S280GD+AZ S320GD+AZ S350GD+AZ	220 250 280 320 350	300 330 360 390 420
Continuously hot-dipped zinc coated strip and sheet of mild steel for cold forming	EN 10327	DX51D+Z DX52D+Z DX53D+Z	140 1) 140 1) 140 1)	270 1) 270 1) 270 1)

1) Minimum values of the yield strength and ultimate tensile strength are not given in the standard. For all steel grades a minimum value of 140 N/mm^2 for yield strength and 270 N/mm^2 for ultimate tensile strength may be assumed.
2) The yield strength values given in the names of the materials correspond to transversal tension. The values for longitudinal tension are given in the table.

NA 2.4 Clause 3.2.4 (1) Thickness and thickness tolerances

The following recommended ranges of core thickness t_{cor} should be used:
- for sheeting and members: 0,45mm $\leq t_{cor} \leq$ 15 mm
- for connections: 0,45mm $\leq t_{cor} \leq$ 4 mm , see 8.1(2) of CYS EN 1993-1-3

NA 2.5 Clause 5.3 (4) Structural modeling for analysis

The recommended values e_0/L = 1/600 for elastic analysis and e_0/L = 1/500 for plastic analysis should be used for sections assigned to LTB buckling curve a taken from 6.3.2.2 of CYS EN 1993-1-1.

NA 2.6 Clause 8.3 (5) Connections with mechanical fasteners

The recommended value of γ_{M2}=1,25 should be used.

NA 2.7 Clause 8.3 (13), Table 8.1 Connections with mechanical fasteners

No further information is provided in this National Annex.

NA 2.8 Clause 8.3 (13), Table 8.2 Connections with mechanical fasteners

No further information is provided in this National Annex.

NA 2.9 Clause 8.3 (13), Table 8.3 Connections with mechanical fasteners

No further information is provided in this National Annex.

NA 2.10 Clause 8.3 (13), Table 8.4 Connections with mechanical fasteners

No further information is provided in this National Annex.

NA 2.11 Clause 8.4 (5) Spot welds

The recommended value of γ_{M2}=1,25 should be used.

NA 2.12 Clause 8.5.1 (4) General

The recommended value of γ_{M2}=1,25 should be used.

NA 2.13 Clause 9 (2) Design assisted by testing

No further information is provided in this National Annex.

Public Enquiry Draft

NA 2.14 Clause 10.1.1 (1) General

No further information is provided in this National Annex.

NA 2.15 Clause 10.1.4.2 (1) Buckling resistance of free flange

The value of the reduction factor χ_{LT} should be determined from 6.3.2.3 of CYS EN 1993-1-1 using buckling curve b (α_{LT}=0,34 ; $\bar{\lambda}_{LT,0} = 0,4$; β=0,75) for the relative slenderness $\bar{\lambda}_{fz}$ given in 10.1.4.2 (2) of CYS EN 1993-1-3.

NA 2.16 Clause A.1 (1), Note 2 General

No further information is provided in this National Annex.

NA 2.17 Clause A.1 (1), Note 3 General

No further information is provided in this National Annex.

NA 2.18 Clause A.6.4 (4) Design values

The values for the partial factors γ_{Mi} should be those chosen in the design by calculation given in section 2 or section 8 of CYS EN 1993-1-3, unless other values result from the use of Annex D of CYS EN 1990.

NA 2.19 Clause E (1) Simplified design for purlins

No further information is provided in this National Annex.

NA 3 DECISION ON THE USE OF INFORMATIVE ANNEXES

NA 3.1 Annex B

Annex B may be used

NA 3.2 Annex C

Annex C shall be used

NA 3.3 Annex D

Annex D may be used

NA 3.4 Annex E

Annex E may be used

NA 4 REFERENCES TO NON-CONTRADICTORY COMPLEMENTARY INFORMATION

None

Public Enquiry Draft