

CYS National Annex to CYS EN 1993-1-12:2007

Eurocode 3: Design of steel structures

Part 1-12: Additional rules for the extension of EN 1993 up to steel grades S 700

Prepared by
Eurocodes Committee, Scientific and Technical
Chamber of Cyprus under a Ministry of Interior's Programme



NATIONAL ANNEX

TO

**CYS EN 1993-1-12: 2007 Eurocode 3: Design of steel
structures**

**Part 1-12: Additional rules for the extension of EN 1993 up
to steel grades S 700**

**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 1993-1-12: 2007.

This National Annex gives:

- (a) Nationally determined parameters for the following clauses of CYS EN 1993-1-12: 2007 where National choice is allowed (see Section NA 2):
- 2.1 (3.1(2))
 - 2.1 (3.2.2(1))
 - 2.1 (5.4.3(1))
 - 2.1 (6.2.3(2))
 - 2.8 (4.2(2))
 - 3 (1)
- (b) References to non-contradictory complementary information to assist the user to apply CYS EN 1993-1-12: 2007 (see Section NA 3).

NA 2 NATIONALLY DETERMINED PARAMETERS

NA 2.1 Clause 2.1 (3.1(2)) Additional rules to CYS EN 1993-1-1 - Additional note:

Steel grades greater than S460 up to S700 are specified for general use or for use in specific applications. The recommended grades in Tables 1 and 2 (CYS) of CYS EN 1993-1-12: 2007 and the nominal values that may be used for their yield strengths are specified for general use provided that the rules in this Part 1.12 are followed.

Table 1 (CYS) — Nominal values of yield strength f_y and ultimate tensile strength f_u for hot rolled structural steel

EN10025-6 Steel grade and qualities	Nominal thickness of the element t mm					
	$t \leq 50$ mm		50 mm < $t \leq 100$ mm		100 mm < $t \leq 150$ mm	
	f_y N/mm ²	f_u N/mm ²	f_y N/mm ²	f_u N/mm ²	f_y N/mm ²	f_u N/mm ²
S 500Q/QL/QL1	500	590	480	590	440	540
S 550Q/QL/QL1	550	640	530	640	490	590
S 620Q/QL/QL1	620	700	580	700	560	650
S 690Q/QL/QL1	690	770	650	760	630	710

Table 2 (CYS) — Nominal values of yield strength f_y and ultimate tensile strength f_u for hot rolled flat products.

EN 10149-2 ^{a)}	1,5 ≤ t ≤ 8 mm		8 < t ≤ 16 mm	
	f_y N/mm ²	f_u N/mm ²	f_y N/mm ²	f_u N/mm ²
S 500MC	500	550	500	550
S 550MC	550	600	550	600
S 600MC	600	650	600	650
S 650MC	650	700	630	700
S 700MC	700	750	680	750

^{a)} Verification of the impact energy in accordance with EN 10149-1 Clause 11, Option 5 should be specified.

NA 2.2 Clause 2.1 (3.2.2(1)) Additional rules to CYS EN 1993-1-1 - Additional note:

The recommended limiting values of the ratio f_u/f_y , the elongation at failure and the ultimate strain ϵ_u for steels greater than S460 up to S700 shall be used as follows:

- $f_u/f_y > 1,05$;
- elongation at failure not less than 10 %;
- $\epsilon_u > 15f_y/E$.

NA 2.3 Clause 2.1 (5.4.3(1)) Additional rules to CYS EN 1993-1-1

No additional rules are specified for steels according to Tables 1 and 2 (CYS). Rules for design with FEM are given in Informative Annex C of CYS EN 1993-1-5.

NA 2.4 Clause 2.1 (6.2.3(2)) Additional rules to CYS EN 1993-1-1 – Additional rule:

The recommended value for the partial factor $\gamma_{M12} = \gamma_{M2} = 1,25$ for net section resistance for steels with grades greater than S460 up to S700 for use in equation (6.7a) of CYS EN 1993-1-12: 2007 shall be used.

NA 2.5 Clause 2.8 (4.2(2)) Additional rules to CYS EN 1993-1-8 – Additional rule:

No additional information is provided for the use of undermatched electrodes.

NA 2.6 Clause 3 (1) Additional rules to application parts CYS EN 1993-2 to EN 1993-6

No limit is set for the range of applicable grades of steel for CYS EN 1993-2 to CYS EN 1993-6.

NA 3 REFERENCES TO NON-CONTRADICTORY COMPLEMENTARY INFORMATION

None

CYPRUS ORGANISATION FOR STANDARDISATION

Limassol Avenue and Kosta Anaxagora 30,

2nd & 3rd Floor, 2014 Nicosia, Cyprus

P.O.BOX.16197, 2086 Nicosia, Cyprus

Tel: +357 22 411411 Fax: +357 22 411511

E-Mail: cystandards@cys.org.cy

Website: www.cys.org.cy
