

***NATIONAL ANNEX  
TO  
CYS EN  
1993-1-12: 2007  
(Including AC:2009)***

***Eurocode 3: Design  
of steel structures***

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



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**TO**  
**CYS EN 1993-1-12: 2007 +AC:2009**  
**Eurocode 3: Design of steel structures**  
**Part 1-12: Additional rules for the extension of EN 1993**  
**up**  
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## INTRODUCTION

This National Annex has been prepared by the CYS TC 18 National Standardisation Technical Committee of the Cyprus Organization for Standardisation. (CYS).

### NA 1 SCOPE

This National Annex is to be used together with CYS EN 1993-1-12:2007+AC:2009. Any reference in the rest of this text to CYS EN 1993-1-12:2007 means the above document. 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 and ultimate tensile 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<br>Steel grade and<br>qualities | Nominal thickness of the element $t$ mm |                         |                                 |                         |                                  |                         |
|---|---|-------------------------|---------------------------------|-------------------------|----------------------------------|-------------------------|
|   | $t \leq 50$ mm                          |                         | $50 \text{ mm} < t \leq 100$ mm |                         | $100 \text{ mm} < t \leq 150$ mm |                         |
|   | $f_y$ N/mm <sup>2</sup>                 | $f_u$ N/mm <sup>2</sup> | $f_y$ N/mm <sup>2</sup>         | $f_u$ N/mm <sup>2</sup> | $f_y$ N/mm <sup>2</sup>          | $f_u$ N/mm <sup>2</sup> |
| 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 <sup>a)</sup> | 1,5 ≤ t ≤ 8 mm          |                         | 8 < t ≤ 16 mm           |                         |
|--------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
|                          | $f_y$ N/mm <sup>2</sup> | $f_u$ N/mm <sup>2</sup> | $f_y$ N/mm <sup>2</sup> | $f_u$ N/mm <sup>2</sup> |
| 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                     |

<sup>a)</sup> 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  $\epsilon_u$  for steels greater than S460 up to S700 is 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  $\gamma_{M12} = \gamma_{M2}$  is 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.

**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 EN1993-6.

**NA 3 REFERENCES TO NON-CONTRADICTORY COMPLEMENTARY INFORMATION**

None



**NA to  
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