

***NATIONAL ANNEX  
TO  
CYS EN 1993-1-8:2005  
(Including AC:2009)***

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

***Part 1-8: Design of  
joints***



**NATIONAL ANNEX**  
**TO**  
**CYS EN 1993-1-8:2005+AC:2009**  
**Eurocode 3: Design of steel structures**  
**Part 1-8: Design of joints**

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## INTRODUCTION

This National Annex has been prepared by CYS TC18 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 1993-1-8:2005+AC:2009. Any reference in the rest of this text to CYS EN 1993-1-8:2005 means the above document.

This National Annex gives:

- (a) Nationally determined parameters for the following clauses of CYS EN 1993-1-8: 2005 where National choice is allowed (see Section NA 2):
- 1.2.6(Group 6: Rivets)
  - 2.2(2)
  - 3.1.1(3)
  - 3.4
  - 5.2.1(2)
  - 6.2.7.2(9)
- (b) References to non-contradictory complementary information to assist the user to apply CYS EN 1993-1-8: 2005 (see Section NA 3).

### NA 2 NATIONALLY DETERMINED PARAMETERS

#### NA 2.1 Clause 1.2.6 Reference Standards, Group 6: Rivets

No further information given.

#### NA 2.2 Clause 2.2(2) General Requirements

Partial safety factors  $\gamma_M$  for joints are given in Table 2.1 (CYS) which corresponds to Table 2.1 of CYS EN 1993-1-8: 2005.

**Table 2.1 (CYS): Partial safety factors for joints**

Resistance of members and cross-sections	$\gamma_{M0}$ , $\gamma_{M1}$ and $\gamma_{M2}$ see CYS EN 1993-1-1: 2005/AC: 2009/A1: 2014
Resistance of bolts	$\gamma_{M2} = 1,25$
Resistance of rivets	
Resistance of pins	
Resistance of welds	
Resistance of plates in bearing	
Slip resistance - at ultimate limit state (Category C) - at serviceability limit state (Category B)	$\gamma_{M3} = 1,25$ $\gamma_{M3,ser} = 1,1$
Bearing resistance of an injection bolt	$\gamma_{M4} = 1,0$
Resistance of joints in hollow section lattice girder	$\gamma_{M5} = 1,0$

Resistance of pins at serviceability limit state	$\gamma_{M6,ser} = 1,0$
Preload of high strength bolts	$\gamma_{M7} = 1,1$
Resistance of concrete	$\gamma_c$ see CYS EN 1992-1-1: 2004 /AC2010

### NA 2.3 Clause 3.1.1(3) General

The yield strength  $f_{yb}$  and the ultimate tensile strength  $f_{ub}$  for bolt classes 4.6, 4.8, 5.6, 5.8, 6.8, 8.8 and 10.9 are given in Table 2.2 (CYS) which corresponds to Table 3.1 of CYS EN 1993-1-8: 2005. These values should be adopted as characteristic values in design calculations.

**Table 2.2 (CYS): Nominal values of the yield strength  $f_{yb}$  and the ultimate tensile strength  $f_{ub}$  for bolts**

Bolt class	4.6	4.8	5.6	5.8	6.8	8.8	10.9
$f_{yb}$ (N/mm <sup>2</sup> )	240	320	300	400	480	640	900
$f_{ub}$ (N/mm <sup>2</sup> )	400	400	500	500	600	800	1000

### NA 2.4 Clause 3.4 Categories of bolted connections

No information is given on the level of preload if preload is not explicitly used in the design calculations for slip resistances but is required for execution purposes or as a quality measure (e.g. for durability).

### NA 2.5 Clause 5.2.1(2) General

No additional information is given on the classification of joints by their stiffness and strength to that given in 5.2.2.1(2) of CYS EN 1993-1-8: 2005.

### NA 2.6 Clause 6.2.7.2(9) Beam-to-column joints with bolted end-plate connections

No further information is given on the use of equation (6.26) of CYS EN 1993-1-8: 2005.

## NA 3 REFERENCES TO NON-CONTRADICTORY COMPLEMENTARY INFORMATION

None



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1993-1-8:2005  
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