CYS National Annex to CYS EN 1993-1-9:2005

Eurocode 3:

Design of steel structures

Part 1-9:

Fatigue

Prepared by

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

NATIONAL ANNEX

TO

CYS EN 1993-1-9: 2005 Eurocode 3: Design of steel structures

Part 1-9: Fatigue

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 1993-1-9: 2005.

This National Annex gives:

(a) Nationally determined parameters for the following clauses of CYS EN 1993-1-9: 2005 where National choice is allowed (see Section NA 2):

- 1.1(2)
- 2(2)
- 2(4)
- 3(2)
- 3(7)
- 5(2)
- 6.1(1)
- 6.2(2)
- 7.1(3)
- 7.1(5)
- 8(4)

(b) References to non-contradictory complementary information to assist the user to apply CYS EN 1993-1-9: 2005 (see Section NA 3).

NA 2 NATIONALLY DETERMINED PARAMETERS

NA 2.1 Clause 1.1(2) Scope

For tolerances see EN 1090. No further information is given on the choice of the execution standard.
No supplementary information is given on inspection requirements during fabrication.

NA 2.2 Clause 2(2) Basic requirements and methods

No requirements are specified for determining specific fatigue loading models.

NA 2.3 Clause 2(4) Basic requirements and methods

No requirements are specified for determining fatigue strength from tests.

NA 2.4 Clause 3(2) Assessment methods

No provisions are given for inspection programmes.

NA 2.5 Clause 3(7) Assessment methods

Fatigue assessment shall be undertaken using either:

- the damage tolerant method or
- the safe life method.

Numerical values for partial factor γ_{Mf} for the two assessment methods and for the two classes of consequences of failure are given in Table 3.1 (CYS).

Table 3.1 (CYS): Values for partial factors γ_{Mf} for fatigue strength

Assessment method	Consequence of failure	
	Low consequence	High consequence
Damage tolerant	1,00	1,15
Safe life	1,15	1,35

NA 2.6 Clause 5(2) Calculation of stresses

No limitations are given for class 4 cross sections.

NA 2.7 Clause 6.1(1) General

No information is given on the use of the nominal stress ranges, modified nominal stress ranges or the geometric stress ranges. For detail categories for geometric stress ranges see Annex B of CYS EN 1993-1-9: 2005.

NA 2.8 Clause 6.2(2) Design value of nominal stress range

No further information is given for the design value of nominal stress range to supplement information given in Annex A of CYS EN 1993-1-9: 2005.

NA 2.9 Clause 7.1(3) General

Verification of a fatigue strength category for a particular application is permitted provided that it is evaluated in accordance the following:

> When test data were used to determine the appropriate detail category for a particular constructional detail, the value of the stress range $\Delta\sigma_C$ corresponding to a value of N_C = 2 million cycles were calculated for a 75% confidence level of 95% probability of survival for log N, taking into account the standard deviation and the sample size and residual stress effects. The number of data points (not lower than 10) was considered in the statistical analysis, see annex D of CYS EN 1990.

NA 2.10 Clause 7.1(5) General

No further information is given on fatigue strength categories $\Delta\sigma_C$ and $\Delta\tau_C$ for details not covered by Table 8.1 to Table 8.10 and by Annex B of CYS EN 1993-1-09: 2005.

NA 2.11 Clause 8(4) Fatigue verification

No further information is given on the use of Annex A of CYS EN 1993-1-09: 2005 for fatigue verification.

NA 3 REFERENCES TO NON-CONTRADICTORY COMPLEMENTARY INFORMATION

None

blank

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