NATIONAL ANNEX

TO

CYS EN 1991-3:2006 (Including AC:2012)

Eurocode 1: Actions on structures

Part 3: Actions induced by cranes and machinery

CYPRUS ORGANISATION FOR STANDARDISATION

NATIONAL ANNEX

TO

CYS EN 1991-3:2006
(Including AC:2012)

Eurocode 1: Actions on structures

Part 3: Actions induced by cranes and machinery

This National Annex has been approved by the Board of Directors of the Cyprus Organisation for Standardisation (CYS) on 24.01.2020.

Centre of Information and Customer Service
at the Cyprus Organisation for Standardisation
phone: +357 22 411413/4 email: c.service@cys.org.cy

INTRODUCTION

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

NA 1 SCOPE

This National Annex is to be used together with CYS EN 1991-3:2006 including AC:2012. Any reference in the rest of this text to CYS EN 1991-3:2006 means the above document.

This National Annex gives:

(a) Nationally determined parameters for the following clauses of CYS EN 1991-3:2006 where National choice is allowed (see Section NA 2)

- 2.1 (2)
- 2.5.2.1 (2)
- 2.5.3 (2)
- 2.7.3 (3)
- A2.2 (1)
- A2.2 (2)
- A2.3 (1)

(b) Decisions on the use of the Informative Annex B (see Section NA 3)

(c) References to non-contradictory complementary information to assist the user to apply CYS EN 1991-3:2006. In this National Annex such information is provided for the following clauses in CYS EN 1991-3:2006 (see Section NA 4)

NA 2 NATIONALLY DETERMINED PARAMETERS

NA 2.1 Clause 2.1 (2) Field of application

Where the crane supplier is known at the time of design of the crane runway, more accurate data may be applied for the individual project. No information is given in this National Annex on the procedure to facilitate the exchange of data with crane suppliers in order to apply more accurate data for the individual project.

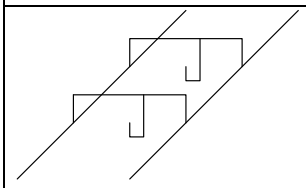
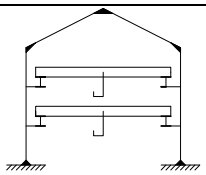
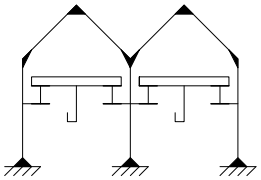
NA 2.2 Clause 2.5.2.1 (2) Vertical loads – eccentricity of wheel loads

The value of the eccentricity of application of wheel load to a rail is $e = 0{,}25\ b_r$.

NA 2.3 Clause 2.5.3 (2) Multiple crane action

The maximum number of cranes to be considered in the most unfavorable position is given in Table 2.3 (CYS)

Table 2.3 (CYS) —Maximum number of cranes to be considered in the most unfavourable position

	For crane runway	For crane supporting structures	
		Single-bay building	Multi-bay building
			
Vertical crane action	3	4 NOTE: The most unfavourable position of the 4 cranes might be: a) 3 cranes behind each other and 1 on a further runway or b) 2 cranes behind each other and 2 on a further runway or c) 2 cranes behind each other and 2 above each other on 2 further runways	6 NOTE: The most unfavourable position of the 6 cranes might be: a) crane position as in a single bay building plus 2 additional cranes in another bay or b) 6 cranes distributed over several bays
Horizontal crane action	1 NOTE: Consider two cranes if they operate together in order to lift heavy loads and if that is more unfavourable	2 NOTE: 2 cranes per bay operating above each other	4 NOTE: Under consideration of conditions for crane runways and for single-bay buildings

NA 2.4 Clause 2.7.3 (3) Drive force K – value of friction factor

The values of the friction factor are:

$\mu = 0{,}2$ for steel – steel

$\mu = 0{,}5$ for steel - rubber

NA 2.5 Clause A.2.2 (1) Partial factors – definition of *γ*-values for cases STR and GEO

The adopted γ-values are given in Table A.1(CYS) and they cover cases STR and GEO specified for buildings in 6.4.1(1) of EN 1990.

Table A.1(CYS) — Recommended values of γ -factors

Action	Symbol	Situation	
		P/T	A
Permanent crane actions			
- unfavourable	$\gamma_{G\,sup}$	1,35	1,00
- favourable	$\gamma_{G\,inf}$	1,00	1,00
Variable crane actions			
- unfavourable	$\gamma_{Q\,sup}$	1,35	1,00
- favourable	$\gamma_{Q\,inf}$		
crane present		1,00	1,00
crane not present		0,00	0,00
Other variable actions	γ_{Q}		
- unfavourable		1,50	1,00
- favourable		0,00	0,00
Accidental actions	γ_{A}		1,00

P - Persistent situation T - Transient situation A - Accidental situation

NA 2.6 Clause A.2.2 (2) Partial factors – definition of *γ*-values for case EQU

The γ-values to be used for verifications with regard to loss of static equilibrium and uplift of bearings are:

$\gamma_{G\,sup} = 1{,}05$

$\gamma_{G\,inf} = 0{,}95$

NA 2.7 Clause A.2.3 (1) *ψ*-factors for crane loads – definition of *ψ*-values

The ψ-factors to be used are:

$\psi_0 = 1{,}0$

$\psi_1 = 0{,}9$

ψ_2 = ratio between the permanent crane action and the total crane action.

NA 3 DECISION ON USE OF THE ANNEXES

NA 3.1 Annex B

Annex B is informative and may be used

NA 4 REFERENCES TO NON-CONTRADICTORY COMPLEMENTARY INFORMATION

None

blank

NA to CYS EN 1991-3:2006 (Including AC:2012)

CYPRUS ORGANISATION FOR STANDARDISATION
Limassol Avenue and Kosta Anaxagora 30,
2nd & 3rd Floor, 2014 Strovolos, 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