

Ministry of the Environment, Finland  
Unofficial translation. Legally binding only in Finnish and Swedish

**11/16**

## **Ministry of the Environment Decree**

**concerning national choices for actions induced by cranes and machinery, when applying  
standard SFS-EN 1991-3**

By decision of the Ministry of the Environment, the following is laid down under Section 117a of the Land Use and Building Act (132/1999), as it stands in Act 958/2012:

### Section 1

#### *Scope*

This Decree is applied in the selection of actions induced by cranes and machinery and is used in conjunction with the latest version of standard SFS-EN 1991-3.

### Section 2

#### *Actions induced by hoists and cranes on runway beams*

Where the crane supplier is known at the time of design of crane runway beams, in accordance with clause 2.1(2) of the standard, the wheel loads specified by the crane manufacturer shall be primarily used for actions induced on runways. The actions should be given as static values without partial safety factors. The actions shall be classified as permanent actions and variable and accidental actions. The dynamic factors for different actions shall be reported. For designing the building frame, the simultaneous actions on different crane runways shall be reported. For the purpose of fatigue analysis, the rate of planned load accumulation of all cranes running on crane runways shall be reported.

### Section 3

#### *Annex A: Basis of design — supplementary clauses to EN 1990 for runway beams loaded by cranes*

The partial safety factors given in Table 1 shall be applied to crane actions in accordance with clause A.2.2(1) of the standard. The values given in the table shall also be applied when designing load-bearing structures carrying crane runway beams.

Table 1. Design values of crane actions (STR/GEO)

Persistent and transient design situations		Eq.6.10a	Eq.6.10b
Permanent actions	Unfavourable	$1.35K_{FI}G_{ki,sup}$	$1.15K_{FI}G_{ki,sup}$
	Favourable	$1.0G_{ki,inf}$	$1.0G_{ki,inf}$
Crane action is the leading variable action			$1.35K_{FI}Q_{k,l}$
Crane action is accompanying variable action			$1.35K_{FI}\psi_{0,i}Q_{k,i}$

The values  $\gamma_{Gsup} = 1.1$  and  $\gamma_{Ginf} = 0.9$ , set out in the Ministry of the Environment Decree concerning national choices for standard SFS-EN 1990, shall be applied to the partial safety factors in accordance with clause A.2.2(2) of the standard.

This Decree enters into force on 1 January 2017.

This Decree shall apply to projects initiated after the Decree enters into force.

This Decree repeals the National Annex to standard SFS-EN 1991-3 concerning the application of Eurocodes in building construction, issued by the Ministry of the Environment on 5 November 2010.

In Helsinki on 7 November 2016

The Minister of Agriculture and the Environment Kimmo Tiilikainen

Senior Engineer Jukka Bergman