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**Recommendations for the
design of structures to
BS EN 1991-1-1**

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Contents

Foreword *ii*

Introduction 1

1 Scope 1

2 Imposed loads on floors for areas of industrial use and other work area use 1

3 Vertical loads on partition walls and parapets 1

4 Uniformly distributed and concentrated loads applicable to infills for walls and parapets 1

Bibliography 4

List of tables

Table 1 – Imposed loads on floors for areas of industrial use and other work area use 2

Table 2 – Uniformly distributed and concentrated loads applicable to infills for walls and parapets – To be read with BS EN 1991-1-1:2002, Table NA.8 3

Summary of pages

This document comprises a front cover, an inside front cover, pages i to ii, pages 1 to 4, an inside back cover and a back cover.

Foreword

Publishing information

This Published Document has been prepared by BSI Subcommittee B/525/1. It is a background paper that gives non-contradictory complimentary information for use in the UK with the Eurocode BS EN 1991-1-1:2002 and its UK National Annex.

This Published Document is published by BSI and came into effect on 31 May 2011. It was prepared by Subcommittee B/525/1, *Actions (loadings) and basis of design*, under the authority of Technical Committee B/525, *Building and civil engineering structures*. A list of organizations represented on this committee can be obtained on request to its secretary.

Relationship with other publications

This Published Document is a background paper that gives non-contradictory complimentary information for use in the UK with BS EN 1991-1-1:2002 and its UK National Annex.

Use of this document

As a guide, this Published Document takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this Published Document is expected to be able to justify any course of action that deviates from its recommendations.

Presentational conventions

The provisions in this Published Document are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

The word "should" is used to express recommendations of this Published Document. The word "may" is used in the text to express permissibility, e.g. as an alternative to the primary recommendation of the clause. The word "can" is used to express possibility, e.g. a consequence of an action or an event.

Notes and commentaries are provided throughout the text of this Published Document. Notes give references and additional information that are important but do not form part of the recommendations. Commentaries give background information.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a Published Document cannot confer immunity from legal obligations.

Introduction

When there is a need for guidance on a subject that is not covered by the Eurocode, a country can choose to publish documents that contain non-contradictory complimentary information that supports the Eurocode. This Published Document provides just such information and has been cited as a reference in the UK National Annex to BS EN 1991-1-1:2002.

1 Scope

This Published Document is a background paper that gives non-contradictory complementary information for use in the UK with BS EN 1991-1-1:2002 and its UK National Annex.

This Published Document gives non-contradictory complementary information relating to imposed loads on floors for areas of industrial use and other work area use.

2 Imposed loads on floors for areas of industrial use and other work area use

BS EN 1991-1-1:2002, 6.3.2.2 does not specify values for imposed loads on floors for areas of industrial and other work area use (i.e. category E2 from BS EN 1991-1-1:2002, Table 6.3).

However, BS EN 1991-1-1:2002, 6.1 (4) does state that loads for heavy equipment (e.g. in communal kitchens, radiology rooms and boiler rooms) should be agreed between the client and/or the relevant authority.

In the absence of such agreement, the minimum imposed loads given in Table 1 may be used for category E2 loaded areas.

3 Vertical loads on partition walls and parapets

BS EN 1991-1-1:2002, 6.4 does not specify values for vertical loads on parapets.

The following guidance may be used.

For all types of activities given in Table NA.8, the parapets, should be designed for a vertical load. This vertical load should be either a concentrated load of 1 kN or a uniformly distributed load of 0.6 kN/m, whichever gives the worst design condition in combination with the recommended horizontal loading of Table NA.8. This combination of loads should be taken into account in the design of relevant elements of the structure that support the parapets.

4 Uniformly distributed and concentrated loads applicable to infills for walls and parapets

BS EN 1991-1-1:2002, 6.4 does not specify values for vertical loads on parapets.

The following guidance may be used.

The uniformly distributed line loads give in BS EN 1991-1-1:2002, Table NA.8 and the uniformly distributed and concentrated loads applicable to the infill are not additive and should be considered as three separate load cases.

Table 1 Imposed loads on floors for areas of industrial use and other work area use

Category of loaded area	Examples of specific use	q_k kN/m ²	Q_k kN
E2 (industrial use)	Communal kitchens except those covered by occupancy class A in Table NA.3	3,0	4,5
	Operating theatres, X-ray rooms, utility rooms	2,0	4,5
	Work rooms (light industrial) without storage	2,5	1,8
	Kitchens, laundries, laboratories	3,0	4,5
	Rooms with mainframe computers or similar equipment	3,5	4,5
	Machinery halls, circulation spaces therein	4,0	4,5
	Cinematographic projection rooms	5,0	To be determined for specific use
	Factories, workshops and similar buildings (general industrial)	5,0	4,5
	Foundries	20,0	To be determined for specific use
	Catwalks	–	1,0 at 1 m centres
	Fly galleries (i.e. access structures used in theatres to hang scenery, curtains, etc.)	4,5 kN/m run distributed uniformly over width	–
	Ladders	–	1,5 rung load

Table 2 Uniformly distributed and concentrated loads applicable to infills for walls and parapets – To be read with BS EN 1991-1-1:2002, Table NA.8

Category of loaded area	Sub-category	Examples	A uniformly distributed load applied to the infill kN/m ²	A point load applied to a part of the infill kN
A (including sub-categories in Table NA.2)	(i)	All areas within or serving exclusively one dwelling including stairs, landings etc but excluding external balconies and edges of roofs [see (vii)]	0,5	0,25
	(ii)	Residential areas not covered by (i)	1,0	0,5
	(iii)	Areas not susceptible to overcrowding in office and institutional buildings, reading rooms and classrooms including stairs	1,0	0,5
	(iv)	Restaurants and cafes	1,5	1,5
C2, C3, C4 and D (including sub-categories in Table NA.2) ^{A)}	(v)	Areas having fixed seating within 530 mm of the barrier, balustrade or parapet	1,5	1,5
	(vi)	Stairs, landings, balustrades, corridors and ramps	1,0	0,5
	(vii)	External balconies and edges of roofs Footways within building curtilage and adjacent to basement/sunken areas	1,0	0,5
C5 (including sub-categories in Table NA.2)	(viii)	All retail areas	1,5	1,5
	(ix)	Footways or pavements less than 3 m wide adjacent to sunken areas	1,5	1,5
	(x)	Theatres, cinemas, discotheques, bars, auditoria, shopping malls, assembly areas, studios. Footways or pavements greater than 3 m wide adjacent to sunken areas	1,5	1,5
E (including sub-categories in Table NA.4)	(xi)	Grandstands and stadia	See requirements of the appropriate certifying authority	
	(xii)	Industrial; and storage buildings except as given by (xiii) and (xiv)	1,0	0,5
	(xiii)	Light pedestrian traffic routes in industrial and storage buildings except designated escape routes	0,5	0,25
	(xiv)	Light access stairs and gangways not more than 600 mm wide	N/A	N/A
	(xv)	Pedestrian areas in car parks including stairs, landings, ramps, edges or internal floors, footways, edges of roofs	1,5	1,5
	(xvi)	Horizontal loads imposed by vehicles	See BS EN 1991-1-1:2002, Annex B	

^{A)} For areas where large crowds might occur, see C5.

Bibliography

For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS EN 1991-1-1:2002, *Eurocode 1: Actions on structures – Part 1-1: General actions – Densities, self weight, imposed loads for buildings*

NA to BS EN 1991-1-1:2002, *UK National Annex to Eurocode 1: Actions on structures – Part 1-1: General actions – Densities, self weight, imposed loads for buildings*

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