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Contents

		Page
	Foreword	**iii**
	Introduction	1
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	BS EN 1992-1-1:2004+A1, Eurocode 2: Design of concrete structures – Part 1-1: General rules and rules for buildings	1
4.1	Partial factors for materials [BS EN 1992-1-1:2004+A1, 2.4.2.4]	1
4.2	Elastic deformation properties of concrete [BS EN 1992-1-1:2004+A1, 3.1.3]	2
4.3	Value of α_{cc} [BS EN 1992-1-1:2004+A1, 3.1.6 (1)P]	2
	Figure 1 — Stress-strain relationship for axial compression for different durations of loading	3
	Figure 2 — Average stress in compression zone and location of the centroid of the compressive force	4
	Figure 3 — Comparison of experimental and calculated ultimate moments for over-reinforced beams	5
	Figure 4 — Comparison of experimental and calculated strengths of axially loaded columns – Parabolic rectangular diagram for a maximum stress of 0,85 f_c and a maximum strain of 0,002	6
4.4	Value of α_{ct} [BS EN 1992-1-1:2004+A1, 3.1.6 (2)P]	6
4.5	Reinforcement type [BS EN 1992-1-1:2004+A1, 3.2.2 (2)P]	7
4.6	Welding of reinforcement bars [BS EN 1992-1-1:2004+A1, 3.2.5 (1)P]	7
4.7	Cover to reinforcement for durability [BS EN 1992-1-1:2004+A1, 4.4.1.2 (5)]	7
4.8	Allowance in design for deviation in cover to reinforcement [BS EN 1992-1-1:2004+A1, 4.4.1.3]	8
4.9	Simplified load combinations [BS EN 1992-1-1:2004+A1, 5.1.3 (1)P]	8
4.10	Redistribution of bending moments [BS EN 1992-1-1:2004+A1, 5.5]	9
4.11	Calculation of effective length of columns [BS EN 1992-1-1:2004+A1, 5.8.3.1, 5.8.3.2 (4) and (5)]	9
4.12	Design moment in columns [BS EN 1992-1-1:2004+A1, 5.8.7.3 and 5.8.8.2]	10
4.13	Effect of prestressing at ultimate limit state [BS EN 1992-1-1:2004+A1, 5.10.8]	10
4.14	Design shear – Point loads close to support [BS EN 1992-1-1:2004+A1, 6.2.2 (6)]	10
4.15	Maximum shear resistance [BS EN 1992-1-1:2004+A1, 6.2.3 (3)]	11
4.16	Basic control perimeter for loaded areas close to edge of slabs [BS EN 1992-1-1:2004+A1, 6.4.2(4)]	12
4.17	The value of maximum punching resistance adjacent to column [BS EN 1992-1-1:2004+A1, 6.4.5(3)]	12
4.18	Location of punching shear reinforcement with respect to perimeter U_{out} or $U_{out,eff}$ [BS EN 1992-1-1:2004+A1, 6.4.5(4)]	12
4.19	Design with strut-and-tie models [BS EN 1992-1-1:2004+A1, 6.5]	12
4.20	Stress limitation in serviceability limit state [BS EN 1992-1-1:2004+A1, 7.2]	13
4.21	Crack control [BS EN 1992-1-1:2004+A1, 7.3]	13
	Figure 5 — Typical cases of crack width calculations	15
	Figure 6 — Crack width calculations – non-rectangular tension	16
4.22	Deflection control [BS EN 1992-1-1:2004+A1, 7.4]	16
4.23	Checking deflections by calculation [BS EN 1992-1-1:2004+A1, 7.4.3]	18
4.24	Longitudinal reinforcement [BS EN 1992-1-1:2004+A1, 9.5.2]	18
4.25	Transverse reinforcement [BS EN 1992-1-1:2004+A1, 9.5.3(3)]	18
4.26	Tying systems [BS EN 1992-1-1:2004+A1, 9.10]	18
4.27	Tying requirements to comply with building regulations throughout the UK [BS EN 1992-1-1:2004+A1, 9.10.2]	18

4.28	Values of $\alpha_{cc,pl}$ [BS EN 1992-1-1:2004+A1, 12.3.1]	19
4.29	Values of e_{φ} [BS EN 1992-1-1:2004+A1, Expression 12.12]	19
4.30	Modification of partial factors for materials [BS EN 1992-1-1:2004+A1, Annex A]	19
4.31	Detailing rules for particular situations [BS EN 1992-1-1:2004+A1, Annex J]	20
5	BS EN 1992-1-2:2004+A1, Eurocode 2: Design of concrete structures – Part 1-2: General rules – Structural fire design	20
6	BS EN 1992-3:2006, Eurocode 2: Design of concrete structures – Part 3: Liquid retaining or containing structures	20
7	BS EN 1992-4:2018, Eurocode 2: Design of concrete structures – Part 4: Design of fastenings for use in concrete	21
7.1	General	21
7.2	Combined pullout and concrete failure in the case of post-installedbonded fasteners [BS EN 1992-4:2018, 7.2.1.6]	21
Annex A	(informative) **Detailing rules for particular situations**	**22**
	Figure A.1 — Frame corner with closing moment – Model and reinforcement	23
	Figure A.2 — Frame corner with moderate opening moment $(A_s f_{yd} / A_c f_{ck}) \le 0,25$	23
	Figure A.3 — Frame corner with large opening moment $(A_s f_{yd} / A_c f_{ck}) > 0.25$	24
	Figure A.4 — Corbel strut-and-tie model	24
	Figure A.5 — Corbel detailing	25
Annex B	(informative) **Appraisal and testing of structures**	**25**
Annex C	(informative) **Effect of temperature on the properties of concrete**	**28**
	Table C.1 — Creep coefficient multipliers to take account of temperature where the concrete is heated prior to loading	29
	Bibliography	**30**

Summary of pages

This document comprises a front cover, and inside front cover, pages i to iv, pages 1 to 32, an inside back cover and a back cover.

Foreword

Publishing information

This Published Document is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 November 2020. It was prepared by Subcommittee B/525/2, *Structural use of concrete,* under the authority of Technical Committee B/525, *Building and civil engineering structures*. A list of organizations represented on these committees can be obtained on request to the committee manager.

Supersession

PD 6687-1:2020 supersedes PD 6687-1:2010, which is withdrawn

Relationship with other publications

PD 6687-1 is published in two parts:

- Part 1: *Background paper to the National Annexes to BS EN 1992-1, BS EN 1992-3 and BS EN 1992-4;*
- Part 2: *Recommendations for the design of structures to BS EN 1992-2:2005.*

This Published Document is a background paper that gives non-contradictory complementary information for use in the UK with the Eurocodes for concrete, BS EN 1992-1-1:2004+A1:2014, BS EN 1992-1-2:2004+A1:2019, BS EN 1992-3:2006, BS EN 1992-4:2018 and their UK National Annexes.

NOTE BS EN 1992-1-1 contains general rules applicable to the design of all concrete structures. Therefore, B/525/10, which is responsible for Eurocodes for the design of bridges, was consulted in the drafting of this Published Document.

Information about this document

This edition takes into account the revision of the National Annex to BS EN 1992-1-1 in 2015, the publication of revised BS EN 1992-1-2 in 2019 and the publication of BS EN 1992-4 and its National Annex in 2019.

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Where websites and webpages have been cited, they are provided for ease of reference and are correct at the time of publication. The location of a webpage or website, or its contents, cannot be guaranteed.

Use of this document

This publication is not to be regarded as a British Standard.

As a guide, this Published Document takes the form of guidance and recommendations. It should not be quoted as if it were a specification or a code of practice and claims of compliance cannot be made to it.

It has been assumed in the preparation of this Published Document that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The word "should" is used to express recommendations of this standard. 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 standard. Notes give references and additional information that are important but do not form part of the recommendations. Commentaries give background information.

The guidance in this document is presented in roman (i.e. upright) type. Any 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.

Where words have alternative spellings, the preferred spelling of the Shorter Oxford English Dictionary is used (e.g. "organization" rather than "organisation").

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 complementary information that support the Eurocode. This Published Document provides such information and has been cited as a reference in the UK National Annexes to BS EN 1992-1-1:2004+A1, BS EN 1992-1-2:2004+A1, BS EN 1992-3:2006, and BS EN 1992-4:2018.

PD 6687-2:2008 contains non-contradictory complementary information that supports BS EN 1992-2:2005, parts of which are also relevant to the design of building structures. Designers might find this information useful.

1 Scope

This Published Document is a background paper that gives non-contradictory complementary information for use in the UK with BS EN 1992-1-1:2004+A1, BS EN 1992-1-2:2004+A1, BS EN 1992-3:2006, BS EN 1992-4:2018 and their UK National Annexes.

This Published Document gives:

a) background to the decisions made in the National Annexes for some of the Nationally Determined Parameters;

b) commentary on some specific subclauses from BS EN 1992-1-1:2004+A1, BS EN 1992-1-2:2004+A1, BS EN 1992-3:2006 and BS EN 1992-4:2018; and

c) reference to the requirements of the building regulations in the UK [1], [2] that are not covered in BS EN 1992-1-1:2004+A1, BS EN 1992-1-2:2004+A1, BS EN 1992-3:2006 and their UK National Annexes.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

4 BS EN 1992-1-1:2004+A1, Eurocode 2: Design of concrete structures – Part 1-1: General rules and rules for buildings

4.1 Partial factors for materials [BS EN 1992-1-1:2004+A1, 2.4.2.4]

The values recommended in BS EN 1992-1-1:2004+A1, **2.4.2.4** have been adopted in NA+A2:2014 to BS EN 1992-1-1:2004+A1.

BS EN 1992-1-1:2004+A1 gives a value of 1,15 for the partial factor for reinforcement γ_S . A study was undertaken to examine if a lower value could be justified for recent reinforcement production. The reliability study used the thorough data supplied by CARES for the reinforcement properties. The study concluded that it would be feasible to reduce the partial factor to a value of 1,05 for flexure. However, it was not clear from the study if a value of 1,05 would be adequate for shear, particularly in areas where it also has to cater for greater model uncertainty. The blanket value has been used for all phenomena to avoid potential mistakes in design.