

PD 6687-1:2020



BSI Standards Publication

**Background paper to the National
Annexes to BS EN 1992-1, BS EN 1992-3
and BS EN 1992-4**

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PD 6687-1:2020 supersedes PD 6687-1:2010, which is withdrawn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

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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.
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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.