

Steel, concrete and composite bridges —

Part 1: General statement

UDC 624.21.01

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee B/525/10, Bridges, upon which the following bodies were represented:

- Association of Consulting Engineers
- British Cement Association
- British Constructional Steelwork Association Ltd.
- British Precast Concrete Federation Ltd.
- British Railways Board
- British Steel Industry
- British Waterways Board
- Concrete Society
- County Surveyors' Society
- Department of Transport (Highways)
- Department of Transport (Transport and Road Research Laboratory)
- Institution of Civil Engineers
- Institution of Structural Engineers
- Scottish Development Department
- Steel Construction Institute
- Welding Institute

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Contents

	Page
Committees responsible	Inside front cover
Foreword	ii
1 Scope	1
2 Definitions	1
2.1 Loads	1
2.2 Strength of materials	1
2.3 Design values	1
3 Limit states	2
3.1 General	2
3.2 Ultimate limit states	2
3.3 Serviceability limit states	3
3.4 Further requirements	3
4 Modifications to design values	3
5 Verification of structural adequacy	3
6 Design life	4
7 Analysis	4
7.1 General	4
7.2 Methods of analysis	4
7.3 Analysis of structure	5
7.4 Analysis of sections	6
7.5 Effective spans	7
7.6 Model analysis and testing	7
8 Erection	8
9 Foundations	8
9.1 Verification of the safety of foundations including piles	8
9.2 Design of structural foundations	8
10 Bridges overseas	8
Publications referred to	9

Foreword

General

BS 5400 is a document combining codes of practice to cover the design and construction of steel, concrete and composite bridges and specifications for the loads¹⁾, materials and workmanship. It is based on the principles of limit state design outlined in ISO 2394:1986 (first edition), *General principles on reliability for structures*. It is anticipated that BS 5400 will eventually be replaced by the Eurocodes. In the meantime it is not intended to revise BS 5400 to take account of the changes which have been introduced in ISO 2394:1998 (second edition). BS 5400 comprises the following:

- *Part 1: General statement;*
- *Part 2: Specification for loads;*
- *Part 3: Code of practice for design of steel bridges;*
- *Part 4: Code of practice for design of concrete bridges;*
- *Part 5: Code of practice for design of composite bridges;*
- *Part 6: Specification for materials and workmanship, steel;*
- *Part 7: Specification for materials and workmanship, concrete, reinforcement and prestressing tendons;*
- *Part 8: Recommendations for materials and workmanship, concrete, reinforcement and prestressing tendons;*
- *Part 9: Bridge bearings;*
 - Section 9.1: Code of practice for design of bridge bearings;*
 - Section 9.2: Specification for materials, manufacture and installation of bridge bearings.*
- *Part 10: Code of practice for fatigue.*

The start and finish of text introduced or altered by Amendment No. 1 is indicated in the text by tags **[A1]** **[A1]**.

Some of the above parts are manuals of good practice, whilst others express requirements in specific terms. For this reason BS 5400 should not by reference be incorporated as a whole into construction contracts. Certain parts, i.e. Part 2, Part 6 and Part 7, may be suitable for individual incorporation by reference, provided that care is taken to ascertain that no provisions in such parts conflict with other provisions in the text of the contract.

The changes from the 1978 edition of this part of 5400 were originally intended to be implemented by the issue of an amendment. However for ease of use it was decided to incorporate the changes into a new edition. BS 5400-1:1978 is consequently withdrawn.

¹⁾ Throughout BS 5400 external forces applied to the structure and imposed deformations such as those due to changes in temperature will be referred to as “loads” or “loading”; the stress resultants in the structure arising from its response will be referred to as “load effects”.

Objective of BS 5400

The aim of BS 5400 is the achievement of acceptable levels of probability in order that the structure being designed will not become unfit for the use for which it is required, i.e. that it will not reach limit state during its design life. It specifies certain design requirements and a coherent set of partial safety factors for bridges in the UK²⁾, which combine to provide what is considered to be an acceptably low probability of attaining the limit states given in Clause 3.

It has been assumed in the drafting of this British Standard that the executions of its provisions will be entrusted to appropriately qualified and experienced people.

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

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 9 and a back cover.

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²⁾ For bridges to be designed to other load specifications, see clause 10.