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BS 6349-1-4:2021+A1:2025



BSI Standards Publication

Maritime works

Part 1-4: General – Code of practice for materials

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Published by BSI Standards Limited 2025

ISBN 978 0 539 28537 6

ICS 47.020.01; 93.140

The following BSI references relate to the work on this document:

Committee reference CB/502

Drafts for comment 21/30406692 DC, 24/30479580 DC

Amendments/corrigenda issued since publication

Date	Text affected
February 2025	A1. See Foreword for details.

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Foreword

Publishing information

This part of BS 6349 is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 July 2021. It was prepared by Technical Committee CB/502, *Maritime works*. A list of organizations represented on this committee can be obtained on request to the committee manager.

Supersession

[BS 6349-1-4:2021](#) superseded [BS 6349-1-4:2013](#), which has been withdrawn.

BS 6349-1-4:2021+A1:2025 supersedes [BS 6349-1-4:2021](#), which is withdrawn.

Relationship with other publications

BS 6349 is published in the following parts:

- Part 1-1: *General – Code of practice for planning and design for operations;*
- Part 1-2: *General – Code of practice for assessment of actions;*
- Part 1-3: *General – Code of practice for geotechnical design;*
- Part 1-4: *General – Code of practice for materials;*
- Part 2: *Code of practice for the design of quay walls, jetties and dolphins;*
- Part 3: *Code of practice for the design of shipyards and sea locks;*
- Part 4: *Code of practice for design of fendering and mooring systems;*
- Part 5: *Code of practice for dredging and land reclamation;*
- Part 6: *Design of inshore moorings and floating structures;*
- Part 7: *Guide to the design and construction of breakwaters;*
- Part 8: *Code of practice for the design of Ro-Ro ramps, linkspans and walkways.*

Information about this document

[BS 6349-1-4:2021](#) was a full revision of the document, and introduced the following principal changes:

- a) The standard was updated to reflect current industry practice. In particular, the concrete section has been updated to be generally in line with the recommendations of [BS 8500](#).
- b) The metals section was reorganized and updated. In particular, the clauses on corrosion, protective coatings, wraps and cathodic protection have been updated and incorporated into the appropriate section.
- c) A new section on polymers was added.
- d) The sections on stone for armouring and protective works and bituminous materials was updated.
- e) The previous clauses on piles, rails, pipes and pavements were removed from this standard as they are structural elements rather than materials.

[Figure A.2](#) is a reproduction of Figure 6.2 in *Concrete in coastal structures* [1]. It is reproduced with the kind permission of ICE Publishing, 8 Storey's Gate, London SW1P 3AT.

Text introduced or altered by Amendment No. 1 is indicated in the text by tags [A1](#) [A1](#). Minor editorial changes are not tagged.

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- [Section 2](#) has been updated to clarify that, where appropriate, the guidance provided relates to cements and cement combinations. The standard has also been updated to align with [BS 8500-1:2023](#);
- Subclause [9.3](#), which provides guidance related to chains, has been replaced in full;
- Clause [16](#) has been updated to provide additional guidance related to extruded fender units in addition to the guidance previously provided related to moulded and wrapped fender units; and
- Clause [17](#), which provides guidance related to plastics, has been updated to include additional guidance related to regenerated UHMW-PE.

This publication can be withdrawn, revised, partially superseded or superseded. Information regarding the status of this publication can be found in the Standards Catalogue on the BSI website at bsigroup.com/standards, or by contacting the Customer Services team.

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Use of this document

As a code of practice, this part of BS 6349 takes the form of recommendations and guidance. It is not to be quoted as if it were a specification. Users are expected to ensure that claims of compliance are not misleading.

Users may substitute any of the recommendations in this part of BS 6349 with practices of equivalent or better outcome. Any user claiming compliance with this British Standard is expected to be able to justify any course of action that deviates from its recommendations.

Presentational conventions

The provisions of this 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.

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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Section 1 General

Introduction

The materials covered by this part of BS 6349 include the basic materials used in civil engineering construction, and composite or manufactured materials where these are normally considered to be materials in their own right.

The materials covered in this part of BS 6349 are as follows:

- a) concrete: complementary guidance to [BS EN 206](#), [BS 8500-1:2023](#) and [BS 8500-2](#);
- b) metals;
- c) timber;
- d) polymers;
- e) stone for armouring or protection works; and
- f) bituminous materials.

Protective measures and treatments against corrosion of metals cover a wide range of methods that can be applied in the construction, operation and maintenance of maritime structures. These are also addressed in this part of BS 6349.

1 Scope

This part of BS 6349 gives recommendations for the materials used in the design and construction of maritime environment structures, and includes specific provisions for use in a seawater environment.

NOTE Materials used in these conditions are often subject to more onerous environmental conditions than onshore structures, and thus particular attention is paid to the use of durable materials to provide the required performance and design life.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes provisions, or limits the application, of this document¹⁾. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Standards publications

ANSI/AWWA C217, *Microcrystalline wax and petrolatum tape coating systems for steel water pipe and fittings*

ASTM D1765, *Standard classification system for carbon blacks used in rubber products*

[BS 4449](#), *Steel for the reinforcement of concrete – Weldable reinforcing steel – Bar, coil and decoiled product – Specification*

[BS 4482](#), *Steel wire for the reinforcement of concrete products – Specification*

[BS 4483](#), *Steel fabric for the reinforcement of concrete – Specification*

¹⁾ Documents that are referred to solely in an informative manner are listed in the Bibliography.