# BS 6349-5:2016



# **BSI Standards Publication**

# Maritime works –

Part 5: Code of practice for dredging and land reclamation



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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 December 2016. It was prepared by Technical Committee CB/502, *Maritime works*. A list of organizations represented on this committee can be obtained on request to its secretary.

#### **Supersession**

This part of BS 6349 supersedes BS 6459-5:1991, which is withdrawn.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: Design of dry docks, locks, slipways and shipbuilding berths, shiplifts and dock and lock gates;
- 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.

This part of BS 6349 is related to prEN 16907-6, which is currently in preparation.

#### Information about this document

This is a full revision of the standard, and introduces the following principal changes:

- substantial changes to reflect scientific and technological advances since 1991;
- changes to take into account new and revised legislation;
- restructure of text to better facilitate use of the standard;
- changes for consistency with the updated suite of BS 6349 standards that have been revised to take account of Eurocodes.

#### Use of this document

As a code of practice, this part of BS 6349 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 part of BS 6349 is expected to be able to justify any course of action that deviates from its recommendations.

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#### **Presentational conventions**

The provisions of this standard 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").

#### 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 British Standard cannot confer immunity from legal obligations.

## 1 Scope

This part of BS 6349 gives recommendations for dredging and land reclamation works.

In addition, this part of BS 6349 outlines environmental assessment procedures and criteria in relation to the UK that are considered illustrative of similar good practice in many international jurisdictions.

### 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

#### **Standards publications**

ASTM D1586, Standard test method for standard penetration test (SPT) and split-barrel sampling of soils

ASTM D2167, Standard test method for density and unit weight of soil in place by the rubber balloon method

ASTM D2488, Standard practice for description and identification of soils (visual-manual procedure)

ASTM D4253, Standard test methods for maximum index density and unit weight of soils using a vibratory table

ASTM D4254, Standard test methods for minimum index density and unit weight of soils and calculation of relative density

ASTM D7382, Standard test methods for determination of maximum dry unit weight and water content range for effective compaction of granular soils using a vibrating hammer

BS 1377 (all parts), Methods for test for soils for civil engineering purposes

BS 5607, Code of practice for the safe use of explosives in the construction industry

BS 5930:2015, Code of practice for ground investigations

BS 6031, Code of practice for earthworks

BS 6349-1-1, Maritime works – Part 1-1: General – Code of practice for planning and design for operations <sup>1)</sup>

BS EN 933-3, Tests for geometrical properties of aggregates – Part 3: Determination of particle shape – Flakiness index

BS EN 933-4, Tests for geometrical properties of aggregates – Part 4: Determination of particle shape – Shape index

BS EN 1997-1:2004+A1:2013, Eurocode 7 – Geotechnical design – Part 1: General rules

BS EN ISO 22476 (all parts), Geotechnical investigation and testing - Field testing

#### Other publications

[N1]PIANC MARCOM WORKING GROUP 144. Classification of soils and rocks for the maritime dredging process. PIANC Report No. 144. Brussels: PIANC, 2016.

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<sup>&</sup>lt;sup>1)</sup> This part of BS 6349 gives informative references to BS 6349-1-1:2013.

## 3 Terms and definitions

For the purposes of this part of BS 6349, the following terms and definitions apply.

#### 3.1 agitation dredging

practice of moving sediment from the seabed and into suspension for dispersion by local currents

#### 3.2 beneficial use

use of dredged material for a useful purpose such as: engineering; environmental enhancement or compensation; agricultural purposes; or the manufacture of products

#### 3.3 borrow area

source of the excavated or dredged fill material

#### 3.4 bucket capacity

maximum volume of bucket when filled to the level of the cutting edge

#### 3.5 bulking factor

factor representing the increase in volume of dredged material relative to its in-situ volume before dredging

#### 3.6 capital dredging

excavation of bed material underwater from an area never previously dredged or not dredged for a very long period of time

#### 3.7 capping (above water)

use of a compacted fill layer to cover the surface of reclamation fill above water to protect against deterioration, erosion from flowing water and wind

#### 3.8 capping (underwater)

use of a clean dredged material as cover for contaminated bed material or dredged material placed underwateras a means of isolating the contaminated material from the marine/aquatic environment

#### 3.9 competent person

person suitably trained and qualified by knowledge and practical experience, and provided with the necessary instructions, to enable the required task(s) to be carried out correctly

#### 3.10 confined disposal

deposition of dredged material which cannot be used, at a site (below water or on land) which is constrained to prevent lateral displacement (escape) of the materials

#### 3.11 confined disposal facility

area for containing dredged sediments which prevents the material's lateral or vertical displacement (escape) either during or after the material's movement into the facility

#### 3.12 dredged level/depth

#### 3.12.1 design dredged level

level defined by the designer to achieve the function of the works

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