Maritime works –

Part 3: Code of practice for the design of shipyards and sea locks

Publishing and copyright information

Published by BSI Standards Limited 2013

ISBN 978 0 580 78084 4

ICS 47.020.99; 93.140

The following BSI references relate to the work on this document:
Committee reference CB/502
Draft for comment 13/30259247 DC

Publication history

First published August 1988
Second (present) edition, December 2013

Amendments issued since publication

Date	Text affected

Contents

List of figures

List of tables

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 126, an inside back cover and a back cover.

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 2013. 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This part of BS 6349 supersedes BS 6349-3:1988, which is withdrawn.

Relationship with other publications

BS 6349 is published in the following parts [1]:

- Part 1-1: *General – Code of practice for planning and design for operations*;
- Part 1-2: *General – Code of practice for assessment of actions*; [2]
- 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*; [3]
- 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*.

The recommendations in this part of BS 6349 are intended for use in all global locations, but taking into account local conditions. As a British Standard, this part of BS 6349 makes reference to other British Standards and to other publications commonly used in the UK, but it is recognized that in some locations there will be alternative local or international publications that are equally applicable. It is the responsibility of the designer to take steps to be fully cognisant of the prevailing codes and standards in any particular location.

Information about this document

This is a full revision of the standard. The principal change is to broaden the scope to include all principal maritime waterfront structures designed for shipyards and their interrelationship in the design of the whole shipyard. The general criteria for maritime works have been removed in this revision, as they are now collected together in the four subparts of BS 6349-1 [4], which includes general planning and design for operations, actions, geotechnical conditions and materials. BS 6349-3 covers the criteria which are specific to works in shipyards and sea locks.

---

[1] A new part 9, covering port surfacing, is in preparation.
[2] In preparation.
[3] Some of the recommendations in BS 6349-6:1989 have now been incorporated into Clause **9** of the present part of BS 6349, and brought up to date. It is anticipated that these recommendations will be removed from BS 6349-6.
[4] At the time of publication of BS 6349-3, BS 6349-1-2 is still at drafting stage.

Shipyards incorporate industrial processes which determine the operational requirements of the facilities and hence their design. To assist the designer in the use of BS 6349-3, a common format has been adopted for each clause from Clause **4** onwards. This common format is as follows.

a) **Operational parameters**. The operational parameter is defined as the requirement of a system or element necessary to be incorporated or designed in, to undertake a defined function or facilitate operations either alone or in conjunction with other elements or systems, i.e. what is the facility for and why is it necessary?

b) **Siting**. The siting is defined as the location, routing and/or position of the respective element or system with respect to its requirements and other structures, services or elements necessary to be provided as part of the facility, i.e. where should the facility be located?

c) **Elements**. The element is defined as the important minimum individual items, components or elements that are necessary for a system, structure or unit serving the facility that need to be considered in the design, i.e. what are the key factors or items that need to be included and what are their specific design parameters?

d) **Equipment**. The equipment is defined as the individual key items of plant or equipment that are critical in that system, structure or service which it is necessary to incorporate, i.e. what equipment is needed to make the facility work?

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 British Standard is expected to be able to justify any course of action that deviates from its recommendations.

It has been assumed in the preparation of this British Standard 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 provisions in 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.

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 and guidance on the design of shipyard waterfront layouts, dry docks, piers, quays, slipways, shipbuilding berths, shiplifts, floating docks, sea locks, hydrolifts, dock and lock gates, mechanical and electrical services distribution and control systems.

It focuses on shipyard-specific design considerations. It does not apply to general maritime works design or to the detailed planning and design of sea locks, as well as their hydraulic design, which are covered by other parts of BS 6349 and PIANC publications.

This part of BS 6349 is applicable to the design of both commercial and naval base facilities.

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.

BS 6349-1-3, *Maritime works – Part 1-3: General – Code of practice for geotechnical design*

BS 6349-2, *Maritime works – Part 2: Code of practice for the design of quay walls, jetties and dolphins*

BS 6349-4, *Maritime structures – Part 4: Code of practice for design of fendering and mooring systems*

BS EN 1991-1-4, *Eurocode 1 – Actions on structures – Part 4: General actions – Wind actions*

BS EN 1992 (all parts), *Eurocode 2 – Design of concrete structures*

BS EN 1993 (all parts), *Eurocode 3 – Design of steel structures*

BS EN 1997 (all parts), *Eurocode 7 – Geotechnical design*

BS EN 13001 (all parts), *Cranes – General design*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

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

3.1.1 bilge block
ship support unit under the hull sides of a ship when it is drydocked

3.1.2 declivity
longitudinal inclination

3.1.3 dry berth
area of dry land to which ships can be moved for repairs

3.1.4 dry dock
fixed and gated structure with a floor below water level into which ships can be floated and subsequently be made dry

NOTE Dry docks are sometimes referred to as "graving docks".