

Australian Standard™

**Guidelines for design of marinas**



This Australian Standard was prepared by Committee CE-030, Maritime Structures. It was approved on behalf of the Council of Standards Australia on 14 September 2001 and published on 4 December 2001.

---

The following interests are represented on Committee CE-030:

Association of Australian Port and Marine Authorities  
Australian Maritime Engineering Cooperative Research Centre  
Boating Industry Association of Australia  
Department of Transport, WA Maritime Division  
Institute of Public Works Engineering Australia  
Australian Local Government Engineers Association  
Institution of Engineers Australia  
Marina Association of Australia  
Queensland Transport  
The Association of Consulting Engineers Australia  
Timber Preservers Association of Australia  
University of Wollongong

---

#### **Keeping Standards up-to-date**

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about Standards can be found by visiting the Standards Australia web site at [www.standards.com.au](http://www.standards.com.au) and looking up the relevant Standard in the on-line catalogue.

Alternatively, the printed Catalogue provides information current at 1 January each year, and the monthly magazine, *The Australian Standard*, has a full listing of revisions and amendments published each month.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at [mail@standards.com.au](mailto:mail@standards.com.au), or write to the Chief Executive, Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001.

---

*This Standard was issued in draft form for comment as DR 00361.*

Australian Standard™

## Guidelines for design of marinas

Originated as AS 3962—1991.  
Second edition 2001.

### **COPYRIGHT**

© Standards Australia International

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia International Ltd  
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 4133 9

## PREFACE

This Standard was prepared by the Standards Australia Committee, CE-030, Maritime Structures.

The objective of this Standard is to provide designers, manufacturers and operators of marina and vessel berthing facilities with a set of guidelines for recreational marinas and small commercial vessels up to 50 m in length. Guidance is also given for on-shore facilities such as dry boat storage, boatlifts, boat ramps and associated parking facilities. Recommendations of these guidelines may be superseded by the requirements of the relevant authority.

This Standard has been prepared as a guideline only, to provide advice and recommendations for common marina facilities. Clauses in this document are written using informative terminology and should not be interpreted otherwise. The requirements of a marina and its associated facilities should be determined for the individual application.

Comments from NSW Waterways Authority were considered by the committee and some of their recommendations have been included in the Standard.

## CONTENTS

	<i>Page</i>
<b>SECTION 1 SCOPE AND GENERAL</b>	
1.1 SCOPE.....	5
1.2 REFERENCED DOCUMENTS.....	5
1.3 DEFINITIONS.....	6
<b>SECTION 2 INVESTIGATIONS</b>	
2.1 SURVEYS.....	13
2.2 GEOTECHNICAL.....	14
2.3 WIND, HYDRODYNAMICS AND SEDIMENT MOVEMENT ASSESSMENTS...	14
<b>SECTION 3 DIMENSIONAL CRITERIA</b>	
3.1 CHANNEL WIDTHS.....	18
3.2 WATER DEPTHS.....	21
3.3 BERTH SIZES.....	22
3.4 BERTHS FOR HIRE CHARTER YACHTS AND POWER BOATS.....	24
3.5 WALKWAYS, FINGERS, AND MOORING POINTS.....	25
3.6 GANGWAY REQUIREMENTS.....	25
<b>SECTION 4 LOADING AND STABILITY</b>	
4.1 GENERAL.....	26
4.2 LOAD COMBINATIONS FOR LIMIT STATE DESIGN.....	26
4.3 ACCESS TO STRUCTURE.....	27
4.4 DEAD LOADS.....	27
4.5 GANGWAY LIVE LOADS.....	27
4.6 FIXED STRUCTURE LIVE LOADS.....	27
4.7 FLOATING STRUCTURE LIVE LOADS.....	28
4.8 ENVIRONMENTAL LOADS.....	29
4.9 BERTHING AND MOORING LOADS.....	34
4.10 ANCHOR LOADS.....	34
4.11 LATERAL DISPLACEMENT LOAD ON GANGWAY.....	34
4.12 STABILITY.....	34
4.13 PILE HEIGHTS.....	35
4.14 POSITIVE FLOTATION.....	35
<b>SECTION 5 DESIGN CONSIDERATIONS</b>	
5.1 PONTOON MARINA SYSTEMS.....	36
5.2 MATERIAL CONSIDERATIONS.....	36
5.3 PILES.....	37
5.4 NAVIGATION AIDS.....	37
<b>SECTION 6 SERVICES</b>	
6.1 GENERAL.....	38
6.2 FIREFIGHTING.....	38
6.3 WATER SUPPLY.....	39
6.4 WASTE MANAGEMENT.....	39
6.5 LIGHTING.....	40
6.6 STORMWATER CONTROL AND DISPOSAL.....	40
6.7 ELECTRICITY.....	40

	<i>Page</i>
6.8 TELEPHONES .....	40
6.9 FUEL SUPPLY.....	40
6.10 SANITARY FACILITIES AND SHOWER.....	40
 SECTION 7 ONSHORE BOAT FACILITIES	
7.1 GENERAL.....	41
7.2 BOAT LAUNCHING RAMPS .....	41
7.3 DRY STORAGE.....	43
7.4 LAUNCHING AND RETRIEVAL FACILITIES .....	44
 SECTION 8 TRAFFIC AND PARKING	
8.1 TRAFFIC.....	45
8.2 PARKING .....	45
 APPENDICES	
A METACENTRIC HEIGHT METHOD OF STABILITY CALCULATION.....	47
B MARINA ONSHORE SERVICES AND FACILITIES .....	52

STANDARDS AUSTRALIA

---

**Australian Standard**

**Guidelines for design of marinas**

---

SECTION 1 SCOPE AND GENERAL

### 1.1 SCOPE

This Standard sets out guidelines for the design of marinas suitable for vessels up to 50 m in length.

The Standard covers fixed berth and floating pontoon marina systems, single pontoons and floating wave attenuators. Guidance is also given for on-shore facilities such as dry boat storage, boatlifts, boat ramps and associated parking facilities.

NOTES:

- 1 This document is intended for use as a guideline and should not be used as a design specification.
- 2 The environmental impact of marinas should be assessed according to the requirements of the relevant authority.

### 1.2 REFERENCED DOCUMENTS

The documents below are referred to in this Standard.

AS

- |        |  |
|--------|--|
| 1170   | Minimum design loads on structures   |
| 1170.1 | Part 1: Dead and live load and load combinations                                       |
| 1170.2 | Part 2: Wind loads   |
| 1428   | Design for access and mobility (all parts)   |
| 1657   | Fixed platforms, walkways, stairways and ladders—Design, construction and installation |
| 1851   | Maintenance of fire protection equipment (all parts)                                   |
| 2890   | Off-street parking   |
| 2890.1 | Part 1: Car parking facilities   |
| 3004   | Electrical installations—Marinas and pleasure crafts at low voltage                    |
| 3600   | Concrete structures  |
| 4100   | Steel structures   |
| 4586   | Slip resistance classification of new pedestrian surface materials                     |

AS/NZS

- |        |   |
|--------|---|
| 1418   | Cranes (including hoists and winches)                                       |
| 1418.1 | Part 1: General requirements  |
| 1418.2 | Part 2: Serial hoists and winches   |
| 1418.7 | Part 7: Builders' hoists and associated equipment                           |
| 1418.9 | Part 9: Vehicle hoists  |
| 1664   | Aluminium structures  |
| 3000   | Electrical installations (known as the Australian/New Zealand Wiring Rules) |

NAS

- |       |  |
|-------|--|
| NAS54 | Austroroads traffic engineering practice |
|-------|--|



**SAI GLOBAL**

This is a free 7 page sample. Access the full version online.

The remainder of this document  
is available for purchase online at

**[www.saiglobal.com/shop](http://www.saiglobal.com/shop)**

SAI Global also carries a wide range of publications from a wide variety of Standards Publishers:



**SAI GLOBAL**



Click on the logos to search the database online.