

AS 2198—1983

Australian Standard<sup>®</sup>

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**ANCHORS FOR SMALL BOATS**

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This Australian standard was prepared by Committee CS/1, Small Powered Boats. It was approved on behalf of the Council of the Standards Association of Australia on 22 February 1983 and published on 9 May 1983.

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The following interests are represented on Committee CS/1:

Aluminium Development Council  
Association of Australian Port and Marine Authorities  
Australian Boating Industry Association  
Australian Water Ski Association  
Australian Yachting Federation  
Department of Transport and Construction  
Institution of Marine Engineers  
Manufacturers of Anchors  
National Safety Council of Australia  
New South Wales Police Department  
Royal Institute of Naval Architects  
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## PREFACE

This edition of this standard was prepared under the direction of the Association's Committee on Small Boats, to supersede AS 2198—1978. The standard supplements AS 1799, SAA Small Boats Code, which was prepared by the parent committee.

The standard is intended to assist both anchor manufacturers and users by establishing a range of anchors of known performance and application for average conditions. It will also be available for use in regulations if required for that purpose.

This edition of the standard incorporates a test of the ability of an anchor to adopt its correct orientation and take hold when dragged across a sandy bottom. The committee felt that this test was necessary to ensure that an anchor which was of the correct dimensions also possessed the correct distribution of mass which would enable it to function in practice.

Ideally, a test should have been established for the holding power of an anchor, and the required masses for each type and size of anchor based on holding power. However, it was clearly not possible to establish a standard holding ground, and even if this were possible, it could not take into account the known variation in holding power of different types of anchors in different holding grounds. Accordingly the standard was based on the recommendations of reputable anchor manufacturers, comparative tests which had previously been conducted by marine authorities, and user experience.

The standard takes into account the reduction in mass of 25 percent for high holding power anchors which is allowed by the classification societies. The committee considered making further allowances for ultra-lightweight anchors of high holding power, but sufficient documentary evidence was not available to support this action.

The standard relates the size of anchor to the length of boat, e.g. a size 9 anchor relates to a 9-metre boat. An anchor so provided should be suitable for average conditions. However, if the boat owner wishes to provide for storm conditions, he may purchase a heavier anchor or two anchors of known performance.

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## STANDARDS ASSOCIATION OF AUSTRALIA

**Australian Standard**  
**for**  
**ANCHORS FOR SMALL BOATS**

**1 SCOPE.** This standard specifies requirements for a range of anchors suitable for use in small pleasure boats up to 15 m in length under average conditions.

The standard covers five types of anchor, each in seven different sizes. The masses of the anchors for each size are specified together with relevant details of construction and testing.

Recommendations regarding the size and length of ground chain and cable to be used with the anchors are given in Appendix A. Recommendations on the use of anchors are given in Appendix C.

**2 REFERENCED DOCUMENTS.** The following standards are referred to in this standard:

AS 1504 Fibre Rope (Three-strand Hawser Laid)

AS 1650 Galvanized Coatings

**3 TYPES.** For the purpose of this standard, the types of anchor shall be as follows (see Note):

- (a) Admiralty type — as shown in Fig. 1.
- (b) Stockless type — as shown in Fig. 2.
- (c) Spade type — as shown in Fig. 3
- (d) Plough type — as shown in Fig. 4.
- (e) Grapnel type — as shown in Fig. 5.

Anchors of different design from those illustrated may be acceptable, provided that they comply with the requirements of Clause 6.

NOTE: The above types of anchor are also known under the following names:

- (a) Admiralty — Fishermans or Kedge.
- (b) Stockless — Admiralty pattern stockless.

- (c) Spade — Danforth (registered trademark)  
Meon (registered trademark).
- (d) Plough — C.Q.R. (registered trademark).

**4 SIZES.** Each type of anchor may be provided in seven sizes, with masses which are related to the anchor type and to the length of boat for which the anchor is considered to be suitable under average conditions. The size designation shall correspond to the length of the boat in metres. The sizes and minimum masses of the anchors shall be as shown in Table 1. The masses of the anchors shall be to the nearest kilogram.

Where an anchor is not of a type specified in Clause 3, it shall comply with the size requirements for Stockless anchors given in Table 1.

NOTE: Where it can be demonstrated that a new design of anchor has high holding power, the Statutory Authority may grant a reduction in required mass.

**5 CONSTRUCTION.** Anchors may be of welded, cast or forged construction. Aluminium alloy anchors shall be resistant to corrosion by salt water. Steel anchors shall be finished by hot-dip zinc-coating in accordance with AS 1650, to Heavy Grade (Marine Duty). Care should be taken to maintain the symmetry of the anchor. All anchors shall be free from sharp edges which might cause injury. Other constructional details shall be as follows:

- (a) *Admiralty type anchors.*
  - (i) Substantial flukes shall be provided.
  - (ii) The mass of the stock shall be less than 20 percent of the total mass of the anchor.
  - (iii) The stock shall be movable, to allow the anchor to be stowed. The securing key shall be attached by a chain.

**TABLE 1**  
**SIZES AND MINIMUM MASSES OF ANCHORS**

Size (length of boat in metres)	Mass, kg				
	Admiralty type	Stockless type	Spade type	Plough type	Grapnel type
3	3	4	2	2	3
5	5	8	4	4	5
7	8	14	7	7	8
9	12	18	9	9	12
11	16	22	11	11	16
13	22	30	15	15	22
15	28	40	20	20	28

NOTES:

1. The specified masses are predicated on the use of an adequate amount of ground chain. See Appendix A.
2. Where the boat length does not fit the above table, or a particular size of anchor is not available, the next heavier size anchor should be used.
3. The recommended sizes are considered to be suitable for the average type of boat, under average conditions. Where a boat has a large amount of freeboard, or a large superstructure, or rigging which is subject to windage, a larger size anchor should be used. A larger size anchor or two anchors should be used for storm conditions and in poor holding ground.