

CONFIRMED
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Specification for

Cast iron mudboxes

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The following BSI references relate to the work on this standard:
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Foreword

This British Standard has been prepared under the authority of the Shipbuilding and Marine Industry Standards Committee and is based on a proposal of the British Ship Research Association.

Marine regulatory bodies stipulate that branch and direct bilge suction in machinery spaces shall be led from easily accessible mudboxes fitted at the platform level with straight tail pipes to the bilges. The purpose of the mudbox is to strain and trap foreign matter present in the bilge water in order to protect pumping equipment and also to provide ready access to the tail pipe for “rodding through” in the event of this pipe becoming blocked. This standard provides a specification for cast iron mudboxes which comply with the requirements of the regulatory bodies.

In order to introduce a measure of rationalization into the design of the mudboxes only three body sizes are provided to accommodate a range of six branch sizes.

The following British Standards are referred to in this standard:

BS 729, *Hot dip galvanized coatings on iron and steel articles.*

BS 1449, *Steel plate, sheet and strip — Part 1: Carbon steel plate, sheet and strip.*

BS 1452, *Grey iron castings.*

BS 3643, *ISO metric screw threads.*

BS 4190, *ISO metric black hexagon bolts, screws and nuts.*

BS 4229, *Metric sizes of non-ferrous and ferrous bars — Part 2: Ferrous bars.*

BS 4360, *Weldable structural steels.*

BS 4439, *Screwed studs for general purposes — Metric series.*

BS 4504, *Specification for flanges and bolting for pipes, valves and fittings. Metric series — Part 1: Ferrous.*

BS 5292, *Specification for jointing materials and compounds for installations using water, low-pressure steam or 1st, 2nd and 3rd family gases.*

BS 6511, *Specification for designation of perforations in industrial plate screens.*

BS 6620, *Guide for industrial plate screens of 3 mm thick and above.*

BS MA 18, *Salt water piping systems in ships.*

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 9 and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

NOTE Users of this British Standard: Marine Series, should note that while observing the requirements of the standard they should at the same time ensure compliance with such statutory requirements, rules and regulations as may be applicable to the individual ship concerned.

1 Scope

1.1 This British Standard specifies the design requirements, materials and dimensions for bilge mudboxes intended for the coarse filtration of bilge water which accumulates in ships' machinery spaces.

1.2 The mudboxes are of cast iron construction, of cylindrical form having inlet and outlet branches disposed at right-angles to each other. The mudboxes are provided with internal strainer plates, and the top cover plates are secured by a strongback arrangement to permit expeditious opening.

1.3 The range of nominal sizes specified extends from 50 mm to 150 mm in selected steps corresponding to standard steel tubes.

2 Type and dimensions

2.1 The mudboxes specified in this standard shall conform to the type and dimensions given by the following references:

Figure 1 — Mudbox assembly

Figure 2 — Details of mudbox bodies

Figure 3 — Details of strainer plates

Figure 4 — Details of covers and gaskets

Figure 5 — Details of locking bars and wing nuts.

3 Nominal sizes

3.1 The nominal sizes of the mudboxes, in mm, correspond to the nominal bores of the inlet and outlet branches, and are as follows:

50, 65, 80, 100, 125 and 150 mm

3.2 The six nominal sizes of branches are accommodated by the use of three body sizes as indicated by Figure 1.

4 Pressure rating

4.1 The mudbox shall be designed to withstand a test pressure of 4.0 bar (0.40 MN/m²) gauge. Flange details for the body branches will vary according to the nominal size of the mudbox and shall be in accordance with BS 4504-1. The nominal pressure (NP) rating of nominal sizes 50 to 150 inclusive shall be 16.

5 Materials

5.1 The materials used in the manufacture of the mudboxes shall be in accordance with the requirements given in Table 1. Other materials may be used provided they are at least as suitable for the intended duty and are equally acceptable to the purchaser, and in this respect guidance on acceptable alternative materials is given in BS MA 18 as for salt water strainers.

Table 1 — Materials

Component	Material	Specification	
		BS No.	Designation
Body	Grey cast iron	BS 1452	Grade 12
Cover	Steel plate ^a	BS 4360	Grade 43A
Strainer plates	Steel plate ^a Perforations	BS 1449-1 BS 6620	HR 37/23
Locking-bar	Steel plate or Steel bar	BS 4360 or BS 4229-2	Grade 43A —
Locking-bar bolt	Steel	BS 4190	Grade 4.6
Studs		BS 4439	Grade 4.8
Nuts		BS 4190	Grade 4
Wing nuts		BS 4360	Grade 43A
Washers		BS 4320	—
Gasket	General purpose rubber insertion	5292	—

^a Mild steel covers and strainer plates shall be protected by galvanizing with a minimum average coating weight of 0.61 kg/m² in accordance with BS 729. Galvanizing shall be performed at the final operation.

6 Design

6.1 The mudbox body shall be a one-piece casting with integral inlet and outlet branches as shown in Figure 1 and Figure 2, the bores of which shall be circular with axes at right angles.

6.2 Flanges shall be at right angles to and concentric with the branch bore. Flange faces may have either flat or raised jointing faces in accordance with BS 4504, all bolt holes being drilled off centre-lines unless otherwise specified.

6.3 The strainer plate (see Figure 3) shall be fabricated from perforated plate and shall be fitted in such a manner as to eliminate excessive lateral movement.

6.4 An annular recess shall be provided in the body to accept the cover gasket, and the cover plate shall be secured by means of a rotatable locking-bar and bolting. (See Figure 2, Figure 4 and Figure 5.)