*भारतीय मानक* **IS 7595 (Part 1) : 2024**

***Indian Standard***

# ऑटर बोर्ड — सामान्य अपेक्षाएँ

## भाग 1 समतल आयताकार ऑटर बोर्ड

*( पहला पुनरीक्षण )*

# Otter Boards — General Requirements

## Part 1 Flat Rectangular Otter Boards

*( First Revision )*

ICS 65.150; 47.040



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**September 2024** **Price Group 6**

Inland Harbour Crafts and Fishing Vessels Sectional Committee TED 18

FOREWORD

This Indian Standard (Part 1) (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Inland Harbour Crafts and Fishing Vessels Sectional Committee had been approved by the Transport Engineering Division Council.

This standard was first published in 1975. This revision was undertaken to update the standard and to incorporate latest technological advancement/development that has taken place in various fields. The salient features of this revision are:

a) The standard has been drafted as per latest drafting guidelines;
b) Reference to Indian Standard has been updated; and
c) Material grades referred in standard have been updated.

Otter board is the most important functional device of an otter trawl net. The boards are used in pairs, and are attached to the trawl net in such a way as to remain obliquely to the direction of motion so that the water pressure against the board, forces them to shear outwards, thus spreading the mouth of the net horizontally.

The size and weight of the otter board should be in accordance with the size and power of the vessel as well as the type and size of the trawl gear used.

Otter boards of different shapes, namely, flat rectangular, rectangular horizontally curved, rectangular vertically curved, L-shaped, oval and V-form, are in use. But flat rectangular boards are the most common due to their case of construction.

This draft standard has been issued in several parts. Other parts in this series are:

Part 2 Rectangular horizontally curved otter boards
Part 3 Oval otter boards
Part 4 Application standard
Part 5 V-type otter boards
Part 6 Guidelines for selection

The composition of the Committee responsible for formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 ‘Rules for rounding off numerical values (*second revision*).’ The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard*

# OTTER BOARDS — GENERAL REQUIREMENTS

## PART 1 FLAT RECTANGULAR OTTER BOARDS

*( First Revision )*

### 1 SCOPE

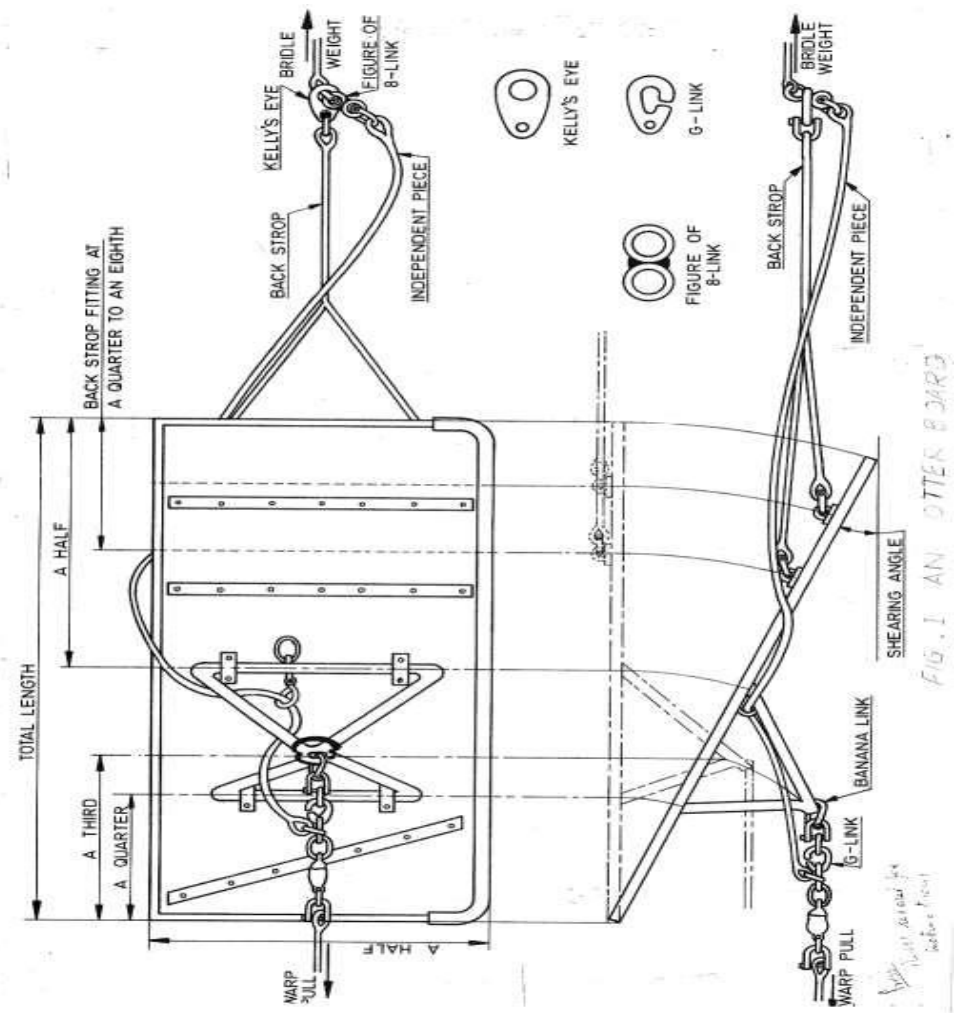
This standard (Part 1) deals with the materials and general design requirements of flat rectangular otter boards for otter trawl.

### 2 REFERENCES

The standards listed in Annex A contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of these standards.

### 3 TERMINOLOGY

For the purpose of this standard, the definitions given below and shown in Fig. 1 shall apply.




All dimensions in millimetres.

FIG. 1 AN OTTER BOARD

**3.1 Back Strop** — A bridle made of flexible wire rope, manila rope or synthetic rope attached to the rings, called norman lashings, on the outer side of the otter board for connecting to the sweep wire.

**3.2 Banana Link** — A metal link fitted to the apex of the brackets of an otter board to prevent the G-link assembly from being fouled.

**3.3 Brackets** — A pair of triangular brackets, a pair of chain bridles, or a pair with one bracket and one chain bridle, fitted on the inner side of the otter board, for the attachment of the towing warp. The height of the forward bracket is always shorter than the rear one, so as to keep the board in an oblique position while towing.

**3.4 Bridle** — Name given to the four short chains or iron bars that hold the otter board at the proper angle, or the short pair of lines (legs) attaching the board to the wing of the trawl, or the short lines that hold the spreader in position.

**3.5 Figure of 8-Link** — A link in the shape of 8 with one hole bigger than the other attached to the independent piece. This link facilitates the connection and disconnection of the otter board from the sweep wire through kelly's eye. It is also known as 'stop link'.

**3.6 G-Link Assembly** — An arrangement of metallic links with a G-shaped link for attaching and detaching the towing warps to otter board.

**3.7 Independent Piece** — A length of wire between the towing rope and the bridle to facilitate disconnecting of the otter board (*see* Fig. 1). Also called pendent.

**3.8 Kelly's Eye** — A shackling device fitted to the back strop of an otter board for engaging and disengaging the sweep line. It is also called the V.D. ring.

**3.9 Otter Boards** — Boards made of planks and steel plates used for keeping open the mouth of the trawl net horizontally. They are used in pairs and constructed as one 'right' board and the other left' board. They also known as 'shear boards', 'trawl boards', 'otter boards', or simply 'doors'.

**3.10 Shear Angle** — It is the angle between the plane of otter board and the direction of the flow of water. It is also known as angle of attack.

**3.11 Towing Rope** — Strong manila rope used during hand operation or strong wire rope used during winch operation of the trawl net to drag the net.

## 4 MATERIALS

The material of various parts shall be so selected as to meet the properties and working conditions. Some of the recommended materials for different parts of otter board are given below:

## 5 CONSTRUCTION

**5.1** The constructional details of otter board complete with fittings are shown in Fig. 2. The timber planks shall be divided with tie bars and normal bolts and lashings shall be strengthened with strap plates or similar protection pieces such as back channels. The whole rig shall be strengthened with iron frames and be protected at the lower edge with a heavy hard wearing metal sole.

**5.2** All metal parts shall be painted with a paint conforming to IS 6951 to protect from corrosion.

| *Sl No.* | *Name of Part* | *Conforming to IS No.* |
|---|---|---|
| (1) | (2) | (3) |
| i) | Otter board | IS 399 |
| ii) | Bracket | IS 7283 |
| iii) | Back strop | IS 2266 or IS/ISO 3077 |
| iv) | G-link | IS 7283 |
| v) | Kelly's eye | IS 7283 |
| vi) | Figure of 8-link | IS 7283 |
| vii) | Sole (shoe) | IS 5986 |
| viii) | Fittings | IS 5986 |
| ix) | Chain bridle | IS/ISO 3077 |
| x) | Towing rope | IS 1084 or IS 226 |

## 6 DIMENSIONS

**6.1** The length and width of an otter board should preferably be in a ratio of 2 : 1. Higher ratios may also be adopted.

### 6.2 Brackets

**6.2.1** *Boards with Adjustable Chain Bridles*

a) When the forward bridle is set at a distance of 20 percent of the total length of the board from the leading edge and the rear bridle at 30 percent from the rear edge, perpendicular height of fore bridle is set at 25 percent to 30 percent and the rear bridle at 50 percent of the total length.

b) When both the fore and rear bridles are fitted at 25 percent of the length of the board respectively from the fore and rear ends, the perpendicular height of the fore bridle is 25 percent and that of the rear bridle is 50 percent of the total length of the board.

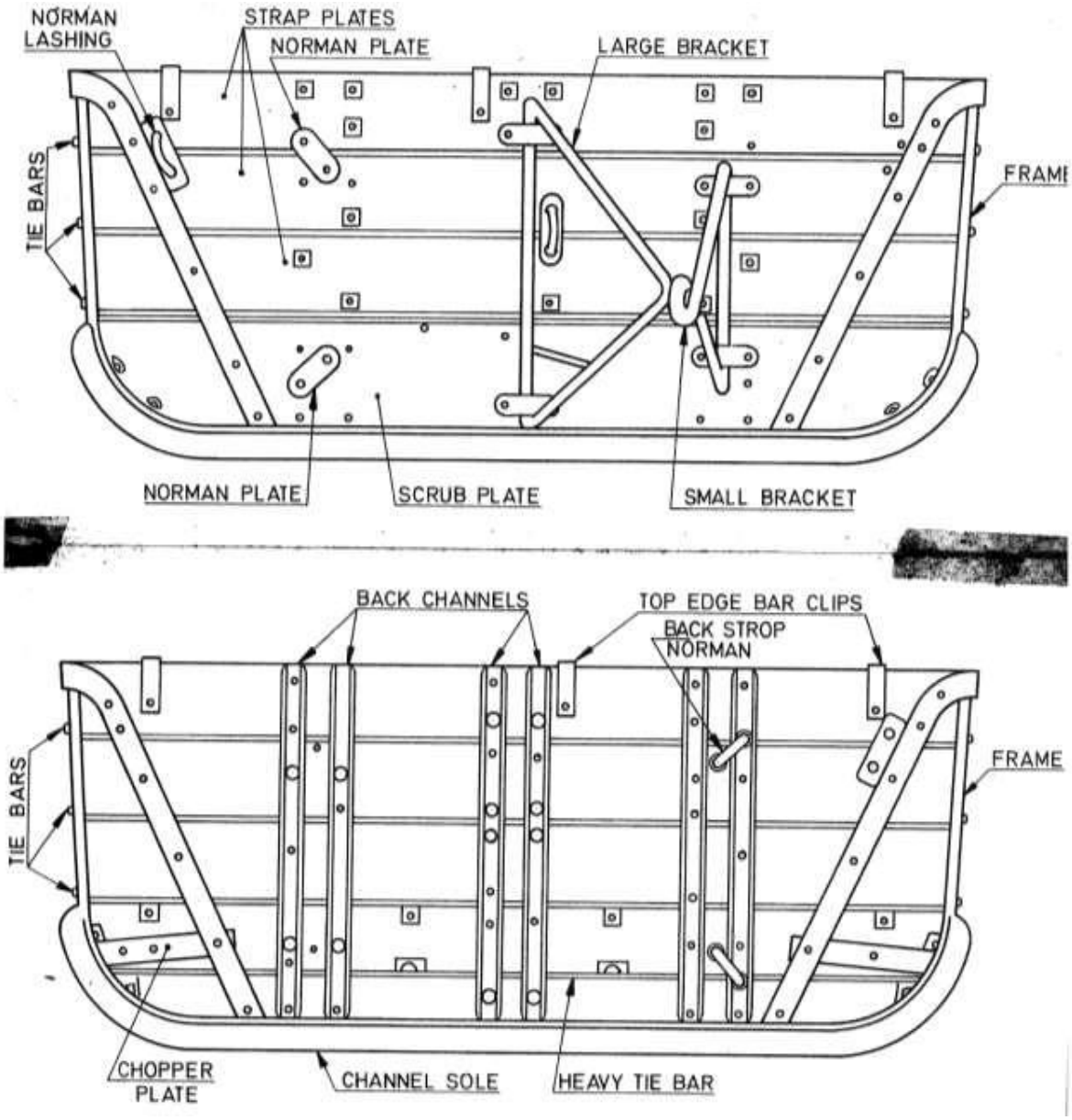



FIG.2 PARTS OF AN OTTER BOARD

**6.2.2** *Boards with Fixed Iron Brackets*

**6.3** When the fore bracket and the rear bracket are positioned respectively at 25 percent and 50 percent of the length of the board from the fore end, the perpendicular height of the fore bracket will be 20 percent and that of the rear bracket will be 25 percent of the total length of the board.

**6.4** The brackets should be positioned at the symmetry axis (by weight) of the board and their apex should fall approximately at one third of its length from the fore edge.

**6.5** The fittings for the norman rings on the outer side of the board for connecting the back strop shall be approximately at one quarter the length of the board from the rear. The position may vary to one eighth of the length or to the very edge of the rear end.

**6.6** The length of the back strop, bridle and warp cable shall be as agreed to between the manufacturer and the purchaser.

**6.7** A shear angle between 20° and 45° is considered of practical importance. For the flat rectangular otter boards the shear angle ranging from 30° to 39° is considered as most suitable.

## ANNEX A

(*Clause* 2)

## LIST OF REFERRED STANDARDS

| *IS No.* | *Title* |
|---|---|
| IS 399 : 1963 | Classification of commercial timbers and their zonal distribution |
| IS 1084 : 2005 | Textiles — Manila ropes — Specification (*fifth revision*) |
| IS 2266 : 2019 | Steel wire ropes for general engineering purposes — Specification (*fifth revision*) |
| IS/ISO 3077 : 2001 | Short link chain for lifting purposes — Grade T (Types T, OAT and DT), Fine-tolerance hoist chain |
| IS 5986 : 2017 | Hot-rolled steel sheet, plate and strip for forming and flanging |
| IS 6948 : 1973 | Specification for ready mixed paint, undercoat, synthetic for ships |
| IS 6951 : 1973 | Specification for ready mixed paint, finishing, exterior, for ships |
| IS 7283 : 1992 | Hot — Rolled bars for the production of bright bars and machined parts for engineering applications specification (*first revision*) |

## ANNEX B

(*Foreword*)

## COMMITTEE COMPOSITION

Inland Harbour Craft and Fishing Vessels Sectional Committee, TED 18

| *Organization* | *Representative(s)* |
|---|---|
| Indian Register of Shipping, Mumbai | SHRI H. V. RAMESH **(*Chairperson*)** |
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Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website-www.bis.gov.in or www.standardsbis.in.

This Indian Standard has been developed from Doc No.: TED 18 (19633).

## Amendments Issued Since Publication

| Amend No. | Date of Issue | Text Affected |
|---|---|---|
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