BRITISH STANDARD

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1255 : 1996

Inland navigation vessels — Swing derricks

The European Standard EN 1255 : 1995 has the status of a British Standard

ICS 47.020.40; 47.060

Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee SME/32, Steering committee on shipbuilding and marine standards, upon which the following bodies were represented:

British Marine Equipment Council
British Maritime Technology
British Waterways Board
Chamber of Shipping
Lloyd's Register of Shipping
Marine Safety Agency
Ministry of Defence
Shipbuilders' and Shiprepairers' Association

The following bodies were also represented in the drafting of the standard, through subcommittees and panels:

Association of Master Lighterman and Barge Owners (Port of London)
British Marine Industries Federation

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Contents

National foreword

This British Standard has been prepared by Technical Committee SME/32 and is the English language version of EN 1255 : 1995, published by the European Committee for Standardization (CEN).

Cross-references

Publication referred to	Corresponding British Standard
EN 696 : 1995	BS EN 696 : 1995 *Fibre ropes for general service. Polyamide*
EN 10027-1 : 1992	BS EN 10027 : *Designation systems for steel* Part 1 : 1992 *Steel names, principal symbols*
ISO 2768-1 : 1989	BS EN 22768 : *General tolerances* Part 1 : 1993 *Tolerances for linear and angular dimensions without individual tolerance indications*

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

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1255

January 1995

ICS 47.020.10: 47.060

Descriptors: Shipbuilding, inland navigation, ships, gangway, definitions, specifications, safety, dimensions, equipment specifications, tests, designation, marking

English version

Inland navigation vessels — Swing derricks

Bateaux de navigation intérieure — Sauterelles

Fahrzeuge der Binnenschiffahrt — Schwenkbäume

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

Ref. No. EN 1255 : 1995 E

Foreword

This European Standard was prepared by the Technical Committee CEN/TC 15, Inland navigation vessels, of which the secretariat is held by DIN.

Safety requirements of this European Standard were worked out in accordance with ISO 4085 and national standards as well as national regulations.

Annex A is informative.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 1995, and conflicting national standards shall be withdrawn at the latest by July 1995.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

Contents

1 Scope

This European Standard applies to swing derricks used on inland navigation vessels. It specifies requirements and test conditions which have to be observed for safety reasons.

Swing derricks are used for transfer of crew members ashore and back to the vessel for laying out ropes during mooring and unmooring operations, particularly when the vessel is close to canals or riverbanks and when no other safe means of getting ashore in those cases is possible.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 696[1)]	*Fibre ropes for general service — Polyamide*
EN 10 027-1: 1992	*Designation systems for steel — Part 1: Steel names, principal symbols*
ENV 10 220	*Plain end steel tubes, welded and seamless — Dimensions and masses per unit length*
ISO 2408: 1985	*Steel wire ropes for general purposes — Characteristics*
ISO 2415: 1987	*Forged shackles for general lifting purposes — Dee shackles and bow shackles*
ISO 2768-1	*General tolerances — Part 1: Tolerances for linear and angular dimensions without individual tolerance indications*
ISO 4085	*Shipbuilding — inland navigation — Swing derricks*
ISO 7531: 1987	*Wire rope slings for general purposes — Characteristics and specifications*

3 Definitions

For the purposes of this standard, the following definitions apply.

3.1 swing derrick

A structure which is solidly fixed to the vessel and provided with a mobile jib positioned approximately parallel to the design waterline.

3.2 jib

A structural member made of steel or aluminium which is provided with two handles.

3.3 pillar

Structure to support the jib and the jib guy.

3.4 jib guy

Connection between the outer end of the jib and the upper end of the pillar.

3.5 hauling line

A rope for hauling back the jib into its initial position.

4 Safety requirements

4.1 Safety dimensions

Dimensions in millimetres.

They apply to numerical data without indication of dimensions in figures and tables.

General tolerances: ISO 2768-c.

This tolerance class in accordance with ISO 2768-1 applies to dimensions without associated limit deviation.

Dimensions shall comply with figure 1.

NOTE. Swing derricks are not expected to conform to the design illustrated in figure 1.

Table 1. Names of component parts

Nr.	Name
1	Jib
2	Pillar
3	Swivel
4	Jib guy
5	Jib guy support
6	Turnbuckle
7	Shackle
8	Handle
9	Hauling line

4.2 Strength requirements

All parts of the swing derrick shall be designed to support a single load of 100 kg applied on the jib centrally between the handles through the full slewing range.

[1)] In preparation

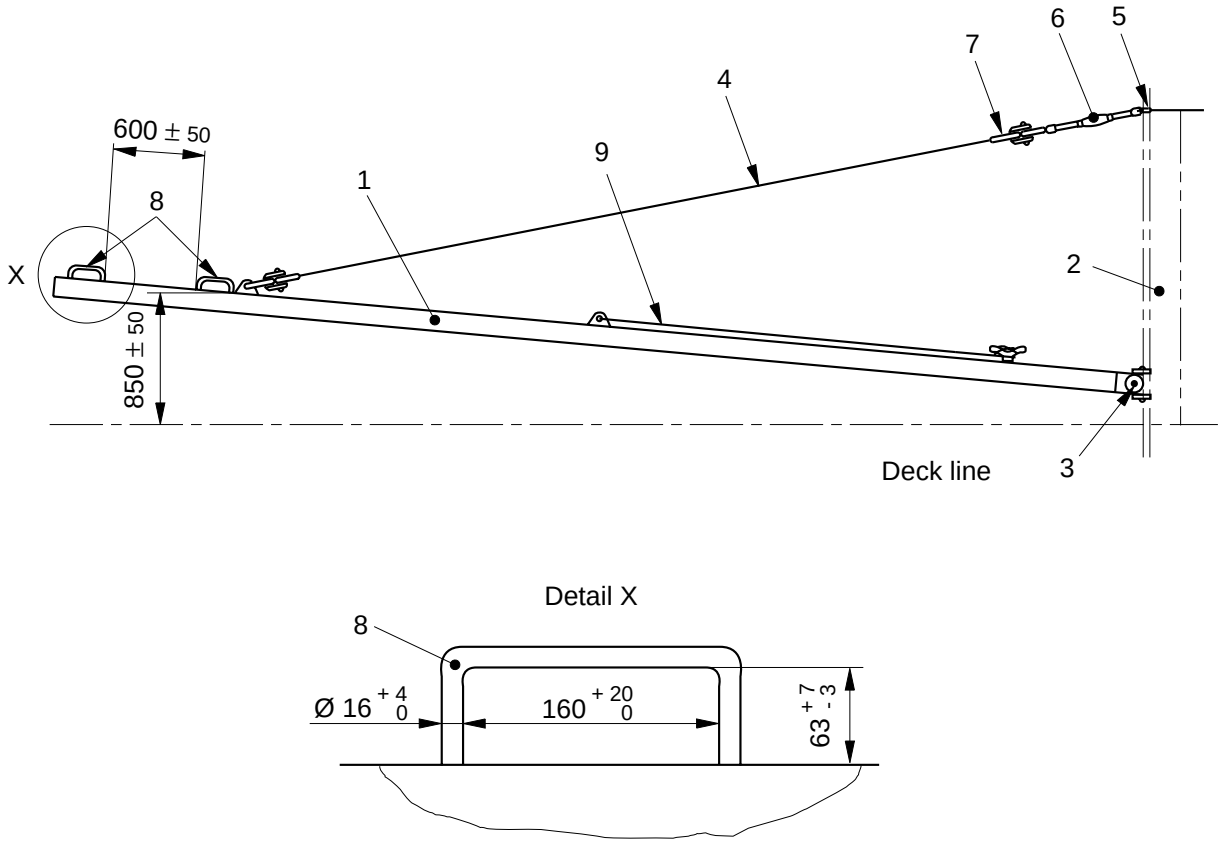


Figure 1. Swing derrick

5 Construction

NOTE. The construction as described in annex A is an example of a swing derrick made of steel.

5.1 Jib

The jib shall consist of seamless tube. The tube ends shall be sealed. If tubes of different diameters are used for the jib, these shall be inserted into one another and fully welded. All welded seams shall be designed to be airtight.

If steel tubes are used the inside of the tube shall be treated with an appropriate protective coating.

The jib shall be secured aboard ship in such a way that unintentional movement is avoided and that it does not unduly obstruct the working areas and walkways.

The minimum diameter of the jib measured between handles shall be 75 mm.

5.2 Pillar

The pillar may be either a structure especially erected to support the jib and jib guy or any other appropriate component part of the vessel (e.g. hatch coaming). The component part shall be firmly connected to the hull and shall not unduly obstruct the working areas and the walkways.

5.3 Swivel

The swivel shall be designed to ensure easy slewing of the jib. Bending moments resulting from the jib load shall not be transmissible to the swivel. The bearing bolt shall be locked.

5.4 Jib guy

Round steel bars or steel wire ropes may be used for the jib guy. If steel wire ropes are used, their ends shall be fitted with means of thimbles. The rope ends shall be provided with clamps. Splices and screw rope clamps shall not be used.

5.5 Jib guy support

The jib guy support and the swivel shall lie along one axis. As far as possible, the jib guy support shall be positioned vertically above the swivel when the ship is on even keel or it shall be moved in the direction of the bow by a length dimension which is related to half the difference in trim between the light and loaded conditions. The jib guy support shall ensure easy slewing when loaded. The bearing bolt shall be locked.

5.6 Turnbuckle

By means of an easily accessible turnbuckle the outer end of the jib shall be adjustable in height in such a way that the upper range between the handles can be adjusted above the walkway by a dimension of 800 to 900 mm. The turnbuckle shall be secured to prevent unintentional movement. One end of the turnbuckle may be integral with the jib guy support.

5.7 Shackle

The jib guy and turnbuckle shall be connected by means of a shackle. Shackle pins shall be locked to prevent unintentional movement.

5.8 Handle

The handles shall be made of the same material as the jib and shall be welded to it.

5.9 Hauling line

The hauling line shall have a minimum diameter of 10 mm and shall be fitted on the upper side of the jib, approximately mid-length. The free end shall also be attached on the upper side in such a way that it may be easily untied and fastened. The secured inner end of the hauling line shall be within 0,5 m of the base of the swivel.

5.10 Surface protection

All parts of the swing derrick shall be permanently protected against the influence of weather. Steel wire ropes shall be hot dip galvanized in accordance with ISO 2408.

6 Testing

6.1 In general

Testing of the swing derrick is carried out by visual examination and measurement effected by authorized institutions after installation on board.

NOTE. Authorized institutions are registered at CEN and examined in conformity with European Regulations.

6.2 Strength test

First the jib shall be slewed in such a way that the area between the handles is vertically above the ship's side. Then the jib shall be loaded with a single load of 200 kg centrally between the handles. The deflection measured in the loaded area shall not exceed 3 % of the jib length. There shall be no permanent deformation after the load has been removed.

Then the jib shall be loaded again with the single load of 200 kg centrally between the handles and slewed over the full slewing range. After the load has been removed there shall be no permanent deformation.

7 Designation

Designation of a swing derrick as shown in figure A.1 with a jib length of l = 8500 mm:
Swing derrick EN 1255 – 8500

8 Marking

The swing derrick shall be marked by means of a manufacturer's name plate.

This name plate shall be weatherproof and be permanently fitted on the jib near the swivel.

It shall contain the following information:

Swing derrick EN 1255 — jib length in millimetres

Permissible load capacity 100 kg

Manufacturer or supplier (Name, place, country)

Test mark

Annex A (informative)

Example of a swing derrick made of steel in compliance with EN 1255

A.1 Dimensions

Dimensions in millimetres.

They apply to numerical data without indication of dimensions in figures and tables.

General tolerances: ISO 2768-c.

This tolerance class in accordance with ISO 2768-1 applies to dimensions without associated limit deviation.

As an example, figure 1 shows a swing derrick out of inserted steel tubes which are welded to each other.

A.2 Manufacture

A.2.1 *Jib*

Steel tube in accordance with ENV 10 220, material complying with EN 10 027-1 : 1991, symbol: S235JR or equivalent shall be used for the jib.

The diameter and wall thickness of the end tubes ($d_1 \times s_1$) indicated in table A.1 shall be achieved.

A.2.2 *Swivel*

A vertical bearing bolt (gooseneck) having a diameter of 22 mm shall be applied for the swivel.

A.2.3 *Jib guy*

For the jib guy, a steel wire rope having a minimum diameter of 16 mm, group 3, class 6×37 in accordance with ISO 2408 : 1985 with thimbles and press clamps, type FT complying with ISO 7531 designed to take shackles in accordance with **A.2.5** and turnbuckle in accordance with **A.2.4,** shall be used.

A.2.4 *Turnbuckle*

The turnbuckle as shown in figure A.2 and table A.2 shall be galvanized and provided with a locking plate. The minimum tensile load shall comply with table A.2 and shall be at least 20 kN.

A.2.5 *Shackle*

Shackles complying with ISO 2415: 1987, minimum size for WLL grade M(4) in accordance with table 1 for Dee-shackles shall be applied.

A.2.6 *Hauling line*

The hauling line shall consist of a fibre rope, e.g. in accordance with EN 696 or equivalent material having a diameter of 10 mm.

A.2.7 *Jib guy support*

As a jib guy support, a U-section made of round steel welded on, in accordance with figure A.3 shall be applied.

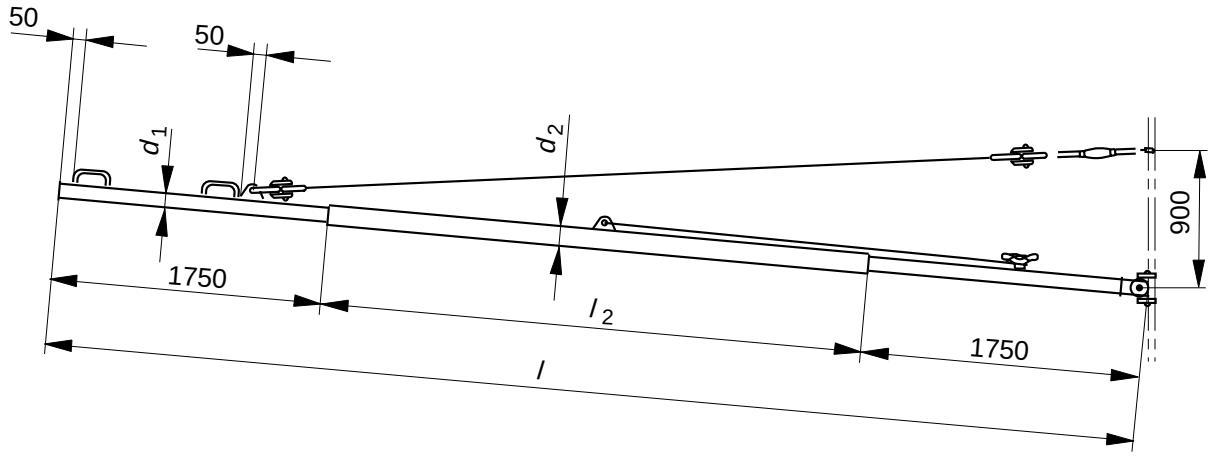


Figure A.1 Swing derrick with built up steel tubes

Table A.1 Dimensions and stressing for swing derrick according to figure A.1

Jib length l	**Central tube** [1] $d_2 \times s_2$	l_2	**End tubes** [1] $d_1 \times s_1$	**Steel wire rope** Ø [2]	**Turnbuckle** kN [3]
7000	89×4	3500	80×4	16	25
8500	102×6	5000	89×4	16	25
10000	114×6	6500	102×5	16	32

[1] Complying with **A.2.1**
[2] Complying with **A.2.3**
[3] Complying with **A.2.4**

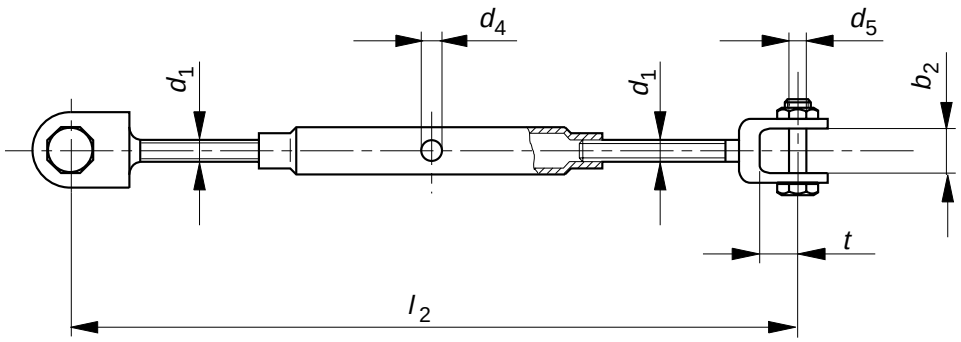
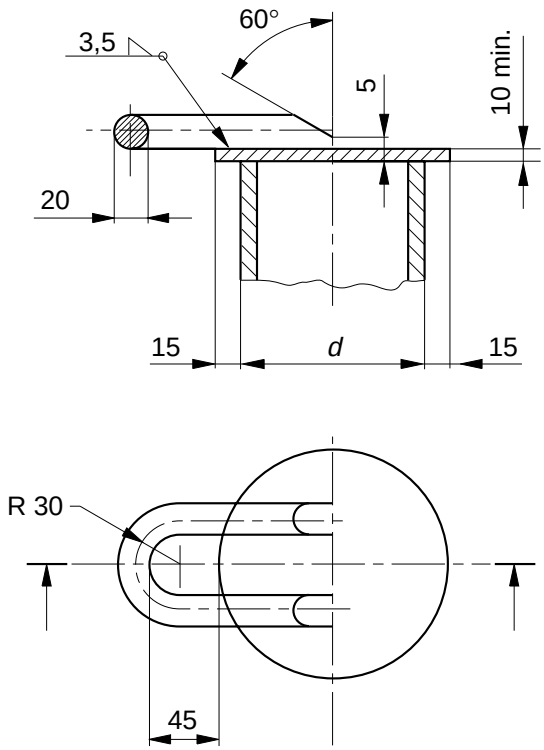


Figure A.2 Turnbuckle with fork ends

Table A.2 Dimensions for turnbuckles with fork ends

Admissible load kN	b_2	**Right and left-handed thread** d_1	d_4	d_5	l_2	t	**Range of adjustment**
25	29	M 27	14	24	617	34	200
32	32	M 30	18	27	660	36	210



A jib guy support on a post with cover plate

Figure A.3 Jib guy support

List of references

See national foreword.

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