International Standard 8148

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Shipbuilding and marine structures — Derrick boom headfittings — Fixed type

Construction navale et structures maritimes — Ferrures de tête de corne de charge — Type fixe

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Descriptors : shipbuilding, lifting equipment, derricks, fittings, metal plates, specifications, dimensions, designation, marking, positioning.

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

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Shipbuilding and marine structures — Derrick boom headfittings — Fixed type

1 Scope and field of application

This International Standard specifies dimensions and materials for fixed type headfittings on ships' derrick booms for cargo handling purposes. Guidance information on the positioning of the guy eyeplate (eyeplate according to ISO 8146) on the derrick boom is given in the annex.

2 References

ISO/R 286, *ISO system of limits and fits — Part 1: General, tolerances and deviations.*

ISO 630, *Structural steels.*

ISO 8146, *Shipbuilding and marine structures — Oval eyeplates.*

ISO 8147, *Shipbuilding — Ships' lifting gear — Terminology.* [1)]

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 8147 apply.

4 Classification

4.1 Types

Fixed type derrick boom headfittings are divided into the following two types:

— type A: with oval eye in the cargo end *parallel* to the cargo boom;

— type B: with oval eye in the cargo end *oblique* to the cargo boom.

4.2 Nominal sizes

The nominal size designation for the cargo end and for the span end of a cargo-span headfitting plate is a numerical value without unit for reference and ordering purposes, and is derived from the permissible load in kilonewtons.

4.2.1 Preferred nominal sizes

The preferred nominal sizes are intended only where a rationalized range of headfitting plates is required.

NOTE — The preferred sizes appear in bold-face type in table 1.

5 Materials

Steel according to ISO 630, grade Fe 360 (as minimum quality).

NOTE — Alternatively ship quality steel plate may be used provided that it has equivalent mechanical and welding properties.

6 Manufacture

6.1 Forming

The headfitting shall be formed by a gas cutting process and subsequently forged or machined as necessary in order to produce the required finished section shape.

Care shall be taken to ensure that a smooth transition is made between the sections.

The headfitting may be manufactured of two single parts (span end and cargo end) which shall be welded to one common component before mounting.

1) At present at the stage of draft proposal.

6.2 Surface

The surface of the finished headfitting shall be free from visible cracks, flaking and lamination.

6.3 Heat treatment

After completion of all manufacturing operations, the forged headfittings shall be normalized.

7 Dimensions

7.1 Main dimensions

The dimensions of the derrick headfitting plates are given in table 1.

The dimensions being related to the nominal size and permissible load shall be selected from table 1 according to the loads acting on the cargo end and span end of the headfitting plate as calculated from the force diagrams for the complete derrick rig.

In each instance, the permissible loads selected from the table shall be equal to or greater than the loads determined by calculation.

7.2 Tolerances

The permissible variation in the dimensions of the finished headfittings shall be within the following tolerance limits.

7.2.1 For dimensions d and t_1 (see figure 1) tolerances shall correspond to the standard tolerance grade IT 14, in accordance with ISO/R 286.

7.2.2 Any external dimensions: $^{+5}_{0}$ %.

7.2.3 Any internal dimensions: $^{0}_{-5}$ %.

8 Designation

For reference and ordering purposes derrick headfitting plates shall be designated as follows.

8.1 Elements for designation

The following elements shall be used in the order given:

— denomination, abbreviated:	plate
— number of this International Standard:	ISO 8148
— type, code letter:	(see 4.1 and figure 1)
— cargo end, code letter:	C
— cargo end, nominal size:	(see table 1)
— span end, code letter:	S
— span end, nominal size:	(see table 1)
— dimension z [1]:	(see figure 1)

8.2 Example

A derrick headfitting plate according to this International Standard, type A, with cargo end (C) of nominal size 10 and span end (S) of nominal size 12, with a length z (corresponding to the derrick boom diameter at the derrick headfitting plate) = 600 mm is designated as follows:

Plate ISO 8148 - A - C10 × S12 - 600

1) Dimension z (in millimetres) defines the length of a plate which corresponds to the derrick boom diameter at the derrick headfitting plate or over the reinforcing plates where fitted (see figures 1 and 2).

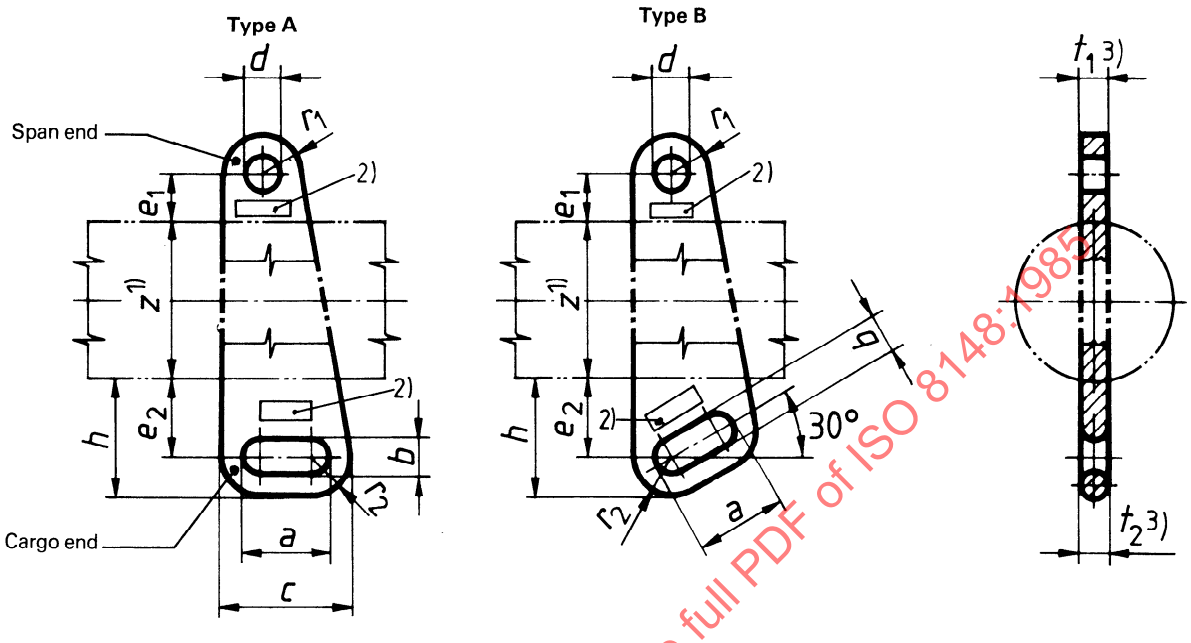

Figure 1 — Shape of plates, type A and type B

Table 1 — Nominal sizes and dimensions

Dimensions in millimetres

Nominal size[4]		Permissible load	Span end dimensions				Cargo end dimensions						
Cargo end C	Span end S	kN	d	e_1	r_1	t_1 [3]	a	b	c	e_2	h	r_2	t_2 [3]
2	2	20	25	40	25	22	50	27	100	49,5	88	38,5	25
2,5	2,5	25	27	40	28	25	55	29	105	53,5	93	39,5	25
3	3	32	30	45	30	28	66	33	126	56,5	103	46,5	30
4	4	40	33	50	33	30	77	36	147	65	118	53	35
5	**5**	50	39	55	38	35	87	41	167	70	130,5	60,5	40
6	6	63	42	60	43	40	91	45	171	75	137,5	62,5	40
8	**8**	80	48	70	48	45	101	51	201	80	155,5	75,5	50
10	10	100	52	75	55	50	117	56	217	90	168	78	50
12	**12**	125	56	80	60	55	128	61	248	100	190,5	90,5	60
16	16	160	65	85	65	60	145	67	265	115	208,5	93,5	60
20	**20**	200	74	95	70	65	157	73	297	125	231,5	106,5	70
25	25	250	78	100	75	70	170	80	331	135	255	120	80
32	**32**	320	86	110	85	80	194	88	374	150	284	134	90
40	40	400	96	120	95	90	220	98	420	170	319	149	100
—	**50**	500	106	135	105	100	—	—	—	—	—	—	—
—	63	630	116	150	115	110	—	—	—	—	—	—	—

1) Dimension z (in millimetres) defines the length of a plate which corresponds to the derrick boom diameter at the derrick headfitting plate or over the reinforcing plates where fitted (see figures 1 and 2).

2) Marking location.

3) Where a headfitting plate of uniform thickness is preferred, the greater of the two thickness t_1 and t_2 shall be used.

4) Sizes appearing in bold-face type are preferred.

9 Marking

9.1 Kind of marking

Derrick headfitting plates shall be permanently and legibly marked at the cargo end and the span end with the respective nominal sizes.

9.2 Positioning of marking

The marking shall be made on a part of the surface not subjected to high stresses (see figure 1).

9.3 Size of marking

The size of stamps used for marking shall be as given in table 2.

Table 2 — Size of stamps

Dimensions in millimetres

Nominal size	Size of stamps
2 and 2,5	5
3 up to 63	6,3