

ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 38

SHIPBUILDING DETAILS FOR SEA NAVIGATION

BOLLARDS (VERTICAL TYPE) WITH AND WITHOUT LUGS

1st EDITION

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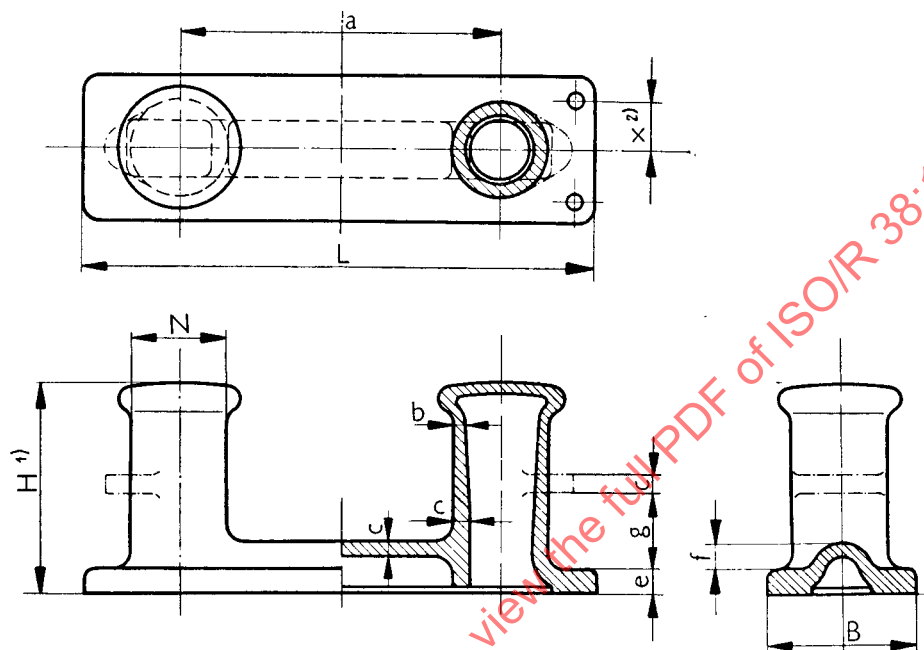
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Printed in Switzerland

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SHIPBUILDING DETAILS FOR SEA NAVIGATION
 BOLLARDS (VERTICAL TYPE) WITH AND WITHOUT LUGS



N = nominal size of bollard = diameter of barrel.

b = thickness of barrel at top.

c = thickness of barrel at bottom, thickness of lug and longitudinal rib.

n = number of bolts or rivets.

d = diameter of bolts or rivets.

P = maximum admissible breaking load of the corresponding rope.

NOTES

If material other than cast iron^{a)} is used, the thicknesses should be changed accordingly.

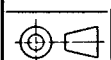
The dimensions in feet and inches are considered as the equivalents of the corresponding dimensions in millimetres.

Bollards are designated by their nominal sizes expressed either in millimetres or in inches.

Examples: 250 mm bollard or 10 inch bollard.

The illustrations do not define the construction.

The construction with lugs is indicated by thin long chain lines.



Dimensions in millimetres

N	L	B	H ¹⁾ min.	a	b ³⁾ min.	c ³⁾ min.	e = f min.	g	P	n ⁴⁾	d Bolts	d Rivets
mm	mm	mm	mm	mm	mm	mm	mm	mm	tonnes		mm	mm
75	500	145	170	275	13	20	25	60	3.5	6	12	13
100	600	170	220	350	15	22	30	80	5.0	6	16	16
125	700	200	275	430	17	25	35	100	8.0	6	20	19
150	800	230	330	500	19	27	40	115	12.0	6	22	22
175	900	270	375	550	21	30	45	130	16.0	6	22	22
200	1000	300	420	600	23	32	50	140	20.0	8	22	22
225	1100	330	465	680	24	34	55	155	25.0	8	27	25
250	1200	360	510	750	26	36	60	165	28.0	8	27	25
300	1450	430	590	900	29	40	60	180	40.0	8	33	34
350	1650	500	665	1000	31	42	65	200	55.0	10	33	34
400	1850	560	735	1100	33	46	65	215	65.0	10	36	—
450	2050	630	790	1200	34	49	70	235	90.0	10	39	—
500	2250	700	840	1300	35	50	70	235	115.0	12	39	—
560	2400	770	885	1400	35	50	75	240	140.0	12	45	—
630	2750	900	955	1600	35	50	75	250	220.0	14	48	—
700	2900	970	1000	1700	35	50	80	250	260.0	14	52	—

Dimensions in feet and inches

N	L	B	H ¹⁾ min.	a	b ³⁾ min.	c ³⁾ min.	e = f min.	g	P	n ⁴⁾	d Bolts	d Rivets
in	ft in	ft in	ft in	ft in	in	in	in	in	tonnes		in	in
3	1 7 ⁵ / ₈	5 ³ / ₄	6 ³ / ₄	10 ⁷ / ₈	1 ¹ / ₂	3 ³ / ₄	1	2 ³ / ₈	3.5	6	1 ¹ / ₂	1 ¹ / ₂
4	1 11 ⁵ / ₈	6 ³ / ₄	8 ⁵ / ₈	1 1 ³ / ₄	9 ⁹ / ₁₆	7 ⁷ / ₈	1 ¹³ / ₁₆	3 ¹ / ₈	5.0	6	5 ⁵ / ₈	5 ⁵ / ₈
5	2 3 ¹ / ₂	7 ⁷ / ₈	10 ⁷ / ₈	1 4 ⁷ / ₈	11 ¹¹ / ₁₆	1	1 ¹³ / ₈	3 ¹⁵ / ₁₆	8.0	6	3 ³ / ₄	3 ³ / ₄
6	2 7 ¹ / ₂	9	1 1	1 7 ⁵ / ₈	3 ³ / ₄	1 ¹ / ₁₆	1 ⁹ / ₁₆	4 ¹ / ₂	12.0	6	7 ⁷ / ₈	7 ⁷ / ₈
7	2 11 ³ / ₈	10 ⁵ / ₈	1 2 ³ / ₄	1 9 ⁵ / ₈	13 ¹³ / ₁₆	1 ¹³ / ₁₆	1 ³ / ₄	5 ¹ / ₈	16.0	6	7 ⁷ / ₈	7 ⁷ / ₈
8	3 3 ³ / ₈	11 ³ / ₄	1 4 ¹ / ₂	1 11 ⁵ / ₈	7 ⁷ / ₈	1 ¹ / ₄	1 ¹⁵ / ₁₆	5 ¹ / ₂	20.0	8	7 ⁷ / ₈	7 ⁷ / ₈
9	3 7 ¹ / ₄	1 1	1 6 ¹ / ₄	2 2 ³ / ₄	15 ¹⁵ / ₁₆	1 ⁵ / ₁₆	2 ³ / ₁₆	6 ¹ / ₈	25.0	8	1	1
10	3 11 ¹ / ₄	1 2 ¹ / ₈	1 8 ¹ / ₈	2 5 ¹ / ₂	1	1 ⁷ / ₁₆	2 ³ / ₈	6 ¹ / ₂	28.0	8	1	1
12	4 9 ¹ / ₈	1 4 ⁷ / ₈	1 10 ¹ / ₈	2 11 ³ / ₈	1 ¹ / ₈	1 ⁹ / ₁₆	2 ³ / ₈	7 ¹ / ₈	40.0	8	1 ¹ / ₄	1 ¹ / ₄
14	5 5	1 7 ⁵ / ₈	2 2 ¹ / ₈	3 3 ³ / ₈	1 ³ / ₁₆	1 ⁵ / ₈	2 ⁹ / ₁₆	7 ⁷ / ₈	55.0	10	1 ¹ / ₄	1 ¹ / ₄
16	6 7 ⁷ / ₈	1 10	2 5	3 7 ¹ / ₄	1 ⁵ / ₁₆	1 ³ / ₄	2 ⁹ / ₁₆	8 ¹ / ₂	65.0	10	1 ³ / ₈	—
18	6 8 ³ / ₄	2 3 ³ / ₄	2 7 ¹ / ₈	3 11 ¹ / ₄	1 ⁵ / ₁₆	1 ¹⁵ / ₁₆	2 ³ / ₄	9 ¹ / ₄	90.0	10	1 ¹ / ₂	—
20	7 4 ⁵ / ₈	2 3 ¹ / ₂	2 9 ¹ / ₈	4 3 ¹ / ₈	1 ³ / ₈	1 ¹⁵ / ₁₆	2 ³ / ₄	9 ¹ / ₄	115.0	12	1 ¹ / ₂	—
22	7 10 ¹ / ₂	2 6 ³ / ₈	2 10 ⁷ / ₈	4 7 ¹ / ₈	1 ³ / ₈	1 ¹⁵ / ₁₆	2 ¹⁵ / ₁₆	9 ¹ / ₂	140.0	12	1 ³ / ₄	—
25	9 1 ¹ / ₄	2 11 ³ / ₈	3 1 ⁵ / ₈	5 3	1 ³ / ₈	1 ¹⁵ / ₁₆	2 ¹⁵ / ₁₆	9 ⁷ / ₈	220.0	14	1 ⁷ / ₈	—
28	9 6 ¹ / ₂	3 2 ¹ / ₄	3 3 ³ / ₈	5 6 ⁷ / ₈	1 ³ / ₈	1 ¹⁵ / ₁₆	3 ¹ / ₈	9 ⁷ / ₈	260.0	14	2	—

¹⁾ The height H may exceed the values in the table by 50 mm maximum.

²⁾ The centre-lines of the bolt holes on each side should be fixed in relation to the longitudinal axis of the bollard.

³⁾ The thicknesses refer to bollards of cast iron with a tensile strength of at least 22 kgf/mm² or 31290 lb/in².

⁴⁾ The required spacing of the holes must be specified on special order.