



Ships' Internal-Bound Blocks

1. Scope

This Japanese Industrial Standard specifies ships' internal-bound blocks (hereinafter referred to as "block"). The block with hook, however, shall not be applied for lifeboat use.

Remark: In this standard units and numerical values in [] are in accordance with the conventional system of units, and represent the required values.

2. Classification

The block shall be classified as given in Table 1.

Table 1

Type	Nominal size						
W 1 AH	140	180	200	220	240	—	—
W 1 AL	—	180	200	220	240	280	300
W 1 AS	140	180	200	220	240	280	300
W 1 BH	140	180	200	220	240	—	—
W 1 BS	140	180	200	220	240	—	—
W 2 AH	140	180	200	220	240	—	—
W 2 AL	—	180	200	220	240	—	—
W 2 AS	140	180	200	220	240	—	—
W 2 BH	140	180	200	220	240	—	—
W 2 BS	140	180	200	220	240	—	—
W 3 AL	—	—	200	220	240	280	300
W 3 AS	—	—	200	220	240	280	300
W 3 BS	—	—	200	220	240	280	300

- Remarks:**
1. The first letter W in the type symbol denotes wooden shell.
 2. The second letter, 1, 2 and 3 in the type symbol denotes respectively single, double and triple block.
 3. The third letter A in the type symbol denotes the block without becket, and B with becket.
 4. The fourth letter H in the type symbol denotes the block with hooks, L with links and letters S with shackles.
 5. The nominal size of the block is given by the height of shell.

3. Construction, Shape and Dimensions

The construction, shape and dimensions of the block shall comply with Figs. 1 to 8 and the following requirements:

- (1) Sheaves shall conform to JIS F 3418-A, or B. However, B is, as a rule, used as the block for lifeboats.
- (2) Shackles shall conform to JIS B 2801.
- (3) Dimensions of the blocks used for type W1AH, W1BH, W2AH and W2BH shall be in accordance with Fig. 7.
- (4) Countersunk head wood screw shall conform to JIS B 1112 or JIS B 1135.
- (5) Axle pins of 240 nominal size and above shall be fitted with grease nipples as shown in Fig. 8, and those of 220 nominal size and under shall, as a rule, be provided with suitable oil holes.
- (6) Swivel nuts may be provided with grooves or holes for screwing purpose.
- (7) The swivel part may be provided with an oil hole.
- (8) Screw threads on the swivel piece shall conform to JIS B 0207.

4. Materials

The materials for the block shall be as given in Table 2.

Table 2

No.	Component	Material	No.	Component	Material
1A	Shell	Zelkova (Keyaki)	6	Washer	JIS H 3100-C2600P or C2680P JIS H 3250-C3604BD or C3604BE
1B	Shell		7	Facing plate	Steel plate
1C	Shell		8	Clench bolt	Steel wire
1D	Shell		9	Washer	Steel plate or brass plate
1E	Shell		10	Countersunk head wood screw	Brass wire
2	Axle pin	JIS G 3101-SS 41	11	Link	JIS G 3101-SS 41
3A	Steel band		12	Shackle	Conform to JIS B 2801
3B	Steel band		13	Shackle	
3C	Steel band		14	Grease nipple	Brass
3D	Steel band		15	Sheave	Conform to JIS F 3418
4	Swivel	JIS G 4051-S 25 C	16	Hook	JIS G 4051-S 25 C
5	Swivel nut	JIS G 3101-SS 41			

5. Surface Treatment

The steel parts of the block excluding the axle pin shall be galvanized.

6. Tests and Inspection

6.1 Loading Test The block with sheave(s) coupled with shackle shall be tested by applying the proof load in such a manner as given in Table 3.

Table 3

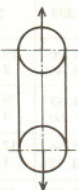
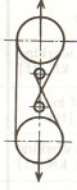
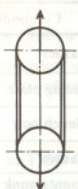
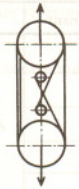
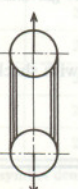
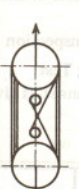
Type		W 1 AH, W 1 AL, W 1 AS							W 1 BH, W 1 BS				
Item													
Testing method													
Nominal size		140	180	200	220	240	280	300	140	180	200	220	240
For general use	Safe working load kN [tf]	1.77 [0.18]	2.84 [0.29]	3.43 [0.35]	4.12 [0.42]	4.90 [0.50]	6.47 [0.66]	7.36 [0.75]	1.67 [0.17]	2.65 [0.27]	3.24 [0.33]	3.92 [0.40]	4.61 [0.47]
	Proof load kN [tf]	7.06 [0.72]	11.38 [1.16]	13.73 [1.40]	16.48 [1.68]	19.61 [2.00]	25.89 [2.64]	29.42 [3.00]	10.00 [1.02]	15.89 [1.62]	19.42 [1.98]	23.54 [2.40]	27.66 [2.82]
For lifeboat use	Safe working load kN [tf]	—	5.00 [0.51]	6.08 [0.62]	7.26 [0.74]	8.53 [0.87]	11.38 [1.16]	12.94 [1.32]	—	7.16 [0.73]	8.73 [0.89]	10.40 [1.06]	12.26 [1.25]
	Proof load kN [tf]	—	11.47 [1.17]	14.02 [1.43]	16.67 [1.70]	19.61 [2.00]	26.18 [2.67]	29.81 [3.04]	—	16.48 [1.68]	20.10 [2.05]	23.93 [2.44]	28.24 [2.88]

Table 3 (Continued)

Item \ Type		W 2 AH, W 2 AL, W 2 AS					W 2 BH, W 2 BS				
Testing method											
Nominal size		140	180	200	220	240	140	180	200	220	240
For general use	Safe working load kN [tf]	6.47 { 0.66 }	10.79 { 1.10 }	12.75 { 1.30 }	15.69 { 1.60 }	17.65 { 1.80 }	7.75 { 0.79 }	12.75 { 1.30 }	15.69 { 1.60 }	18.63 { 1.90 }	21.58 { 2.20 }
	Proof load kN [tf]	12.94 { 1.32 }	21.58 { 2.20 }	25.50 { 2.60 }	31.38 { 3.20 }	35.30 { 3.60 }	15.50 { 1.58 }	25.50 { 2.60 }	31.38 { 3.20 }	37.26 { 3.80 }	43.15 { 4.40 }
For lifeboat use	Safe working load kN [tf]	—	9.12 { 0.93 }	11.18 { 1.14 }	13.34 { 1.36 }	15.69 { 1.60 }	—	10.98 { 1.12 }	13.34 { 1.36 }	15.99 { 1.63 }	18.73 { 1.91 }
	Proof load kN [tf]	—	20.99 { 2.14 }	25.69 { 2.62 }	30.70 { 3.13 }	36.09 { 3.68 }	—	25.30 { 2.58 }	31.18 { 3.13 }	36.78 { 3.75 }	43.05 { 4.39 }

Item \ Type		W 3 AL, W 3 AS					W 3 BS				
Testing method											
Nominal size		200	220	240	280	300	200	220	240	280	300
For general use	Safe working load kN [tf]	17.65 { 1.80 }	20.59 { 2.10 }	24.52 { 2.50 }	32.36 { 3.30 }	37.26 { 3.80 }	19.61 { 2.00 }	23.54 { 2.40 }	27.46 { 2.80 }	36.28 { 3.70 }	41.19 { 4.20 }
	Proof load kN [tf]	35.30 { 3.60 }	41.19 { 4.20 }	49.03 { 5.00 }	64.72 { 6.60 }	74.53 { 7.60 }	39.23 { 4.00 }	47.07 { 4.80 }	54.92 { 5.60 }	72.57 { 7.40 }	82.38 { 8.40 }
For lifeboat use	Safe working load kN [tf]	15.30 { 1.56 }	18.24 { 1.86 }	21.48 { 2.19 }	28.64 { 2.92 }	32.56 { 3.32 }	17.16 { 1.75 }	20.40 { 2.08 }	24.03 { 2.45 }	31.97 { 3.26 }	36.38 { 3.71 }
	Proof load kN [tf]	35.21 { 3.59 }	41.97 { 4.28 }	49.43 { 5.04 }	65.90 { 6.72 }	74.92 { 7.64 }	39.52 { 4.03 }	46.88 { 4.78 }	55.31 { 5.64 }	69.14 { 7.50 }	83.65 { 8.53 }

Remark: The safe working load for a single sheave block means the maximum load withstood at one end of the rope passing through the block. The safe working load for a multiple sheave means the maximum load withstood at the shackle of the block.

6.2 Overhaul Inspection After the loading test is satisfactorily finished, all parts shall be inspected by overhauling, and be free from any defect.

7. Designation

The block shall be designated by the title, JIS number, type, nominal size, kind of sheaves and type symbol and nominal diameter of shackles.

Example: Ships' Internal-Bound Block W 2 AS 140 A-SC 10 or JIS F 3426 W 2 AS 140 A-SC 10

8. Marking

The following particulars shall be marked on a readily visible part of the block by stamping or branding or by attaching an identification plate. For the block tested under lifeboat proof load, marking of the safe working load shall be followed by the remark "Lifeboat Use", provided the safe working load for general use may be added, if necessary.

- (1) Nominal size or identification symbol
- (2) Safe working load
- (3) Year and month of manufacture or abbreviation for it
- (4) Manufacturer's name or abbreviation for it

Nominal size	Type	Weight	Safe working load (kg)	Safe working load (ton)	Safe working load (lb)	Safe working load (kip)
140	SC 12 (W 2 AS 140 A-SC 10)	10.5	14.0	1.4	30.9	0.7
180	SC 12 (W 2 AS 180 A-SC 10)	13.5	18.0	1.8	39.7	0.9
220	SC 14 (W 2 AS 220 A-SC 10)	16.5	22.0	2.2	48.5	1.1
250	SC 14 (W 2 AS 250 A-SC 10)	19.5	25.0	2.5	55.1	1.2
280	SC 16 (W 2 AS 280 A-SC 10)	22.5	28.0	2.8	61.7	1.4
320	SC 16 (W 2 AS 320 A-SC 10)	25.5	32.0	3.2	69.3	1.6
360	SC 18 (W 2 AS 360 A-SC 10)	28.5	36.0	3.6	77.9	1.8

Remarks: 1. Calculated safe working load is based on the nominal breaking load of the shackles and the safe working load of the shackles. 2. For the application of the safe working load, the safe working load of the shackles shall be used.