

Wharf Ladders for Small Ships

1. Scope

This Japanese Industrial Standard specifies aluminium alloy wharf ladders for small ships (hereinafter referred to as "ladder"). However, this standard does not apply to ladders for passengers, transporting heavy items or to ladders of not integral construction.

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 ladder for small ships shall be classified as given in **Table 1** according to the length and width of the principal members.

Table 1

Type	Dimensions	
	Length	Width
As4	4.0	0.40
As4W		0.45
As5	5.0	0.40
As5W		0.45
As6	6.0	0.40
As6W		0.45

Unit: mm

3. Performance

The principal member of ladders shall have the following performance:

- Strength** When the principal member of ladder is supported at both ends and applied with a uniform load of 735 N (75 kgf) per one meter in the longitudinal direction or with a concentrated load of 1 470 N (150 kgf) at its mid length point, the stress created in the member in each case shall be 1/2 or less of the proof stress of the material of the member.
The maximum deflection of the principal member at its mid-length point in the above strength test shall be 1/75 or less of the length of the member.
- Buoyancy** The principal member of ladder shall have such a buoyancy that it does not become totally submerged in water.
- Appearance** The principal member of ladder shall be free from defects harmful for its service such as flaws, defective plating, loose fittings, and ladder rollers shall move smoothly.

4. Construction, Shape and Dimensions

The construction, shape and dimensions shall be as shown in **Figs. 1 to 4**, and shall conform to the following requirements:

- The principal member of ladder shall be of welded construction using extruded shapes, where structural members may be bolted in part.
- An insulation material shall be inserted between the aluminium alloy and steel members where they come into contact.
- Handrailing shall be provided on one side and the handrail rope shall be of a fibre rope with a diameter from 16 to 22 mm. Handrail ropes shall be sheathed with covering material if necessary.
- All steel parts shall be galvanized

5. Materials

The materials shall be as given in **Table 2** or equivalent.

Table 2

No.	Component	Material
1	Principal member	JIS H 4100-A6063 S-T5
2	Lattice	
3	Fittings	JIS G 3101-SS41
4		JIS H 4100-A6063 S-T5
5		
6	Cleat	JIS H 4100-A6063 S-T5 or JIS H 5202-AC7A-F
7	Bracket	JIS H 4100-A6063 S-T5 or JIS H 5202-AC7A-F
8	Roller	Rubber or polyamid
9	Bush	Synthetic resins
10	Axle and split pin	JIS G 4303-SUS 304 or JIS G 3101-SS41
11	Washer	Mild steel or JIS G 3101-SS41
12	Handrails and sockets	JIS H 4100-A6063 S-T5
13		JIS H 4100-A6063 S-T5 or JIS H 5202-AC7A-F
14		JIS H 4100-A6063 S-T5 or JIS G 4303-SUS304
15		JIS H 4100-A6063 S-T5 or JIS H 5202-AC7A-F
16		JIS H 4100-A6063 S-T5
17	Filling bar	

6. Tests and Inspection

The tests and inspection shall be as follows:

- (1) **Load inspection** The load test shall be carried out under the conditions specified in 3.(1) with the principal member being subjected to uniform loads or a concentrated load, and it shall satisfy the requirements without causing any abnormality in all parts.
- (2) **Buoyancy inspection** The buoyancy test shall be carried out with the principal member thrown into water, and shall conform to the requirements in 3.(2).
- (3) **Visual inspection** The visual inspection shall be carried out, and shall conform to the requirements in 3.(3).

7. Designation

The ladder for small ships shall be designated by the title, or JIS number and classification.

Example: Wharf Ladder for Small Ships As4 or JIS F 2623-As4.

8. Marking

The ladder shall be marked in a conspicuous part on the body with the following particulars.

- (1) Type
- (2) Manufacturer's name or mark
- (3) Year and month of manufacture