

Pilot accommodation ladders

1. Scope This Japanese Industrial Standard specifies accommodation ladders (hereinafter referred to as "ladder") used for embarkation and disembarkation of pilots in combination with the pilot ladder (when the boarding height above the sea surface exceeds 9 metres).

Remarks: This standard makes reference to the following standards:

JIS G 3101 – Rolled steel for general structure

JIS H 4000 – Aluminium and aluminium alloy sheets and plates, strip and coiled sheets

JIS H 4100 – Aluminium and aluminium alloy extruded shapes

2. Definitions For the purpose of this standard the following definitions apply:

- (1) **Nominal length of ladder (L)** The length (m) between the centre of top eye pin and the centre of connecting pin of the lower platform (see **Fig. 1**).
- (2) **Breadth of ladder (B)** The effective breadth of the tread (see **Fig. 1**).
- (3) **Height of handrail (H)** The vertical distance between the highest point of the tread and the upper face of the handrail with the ladder in the minimum angle of use (against the horizontal) (see **Fig. 1**).

3. Classification The ladders shall be classified into two classes as given in **Table 1** according to the material.

Table 1

Class	Material
S	Steel
A	Aluminium alloy

4. Construction, shape and dimensions The construction, shape and dimensions of the ladders shall conform to the following requirements. **Fig. 1** shows an example.

- (1) The angle of use of the ladder shall be up to 55° or less to the horizontal. The lower platform shall be so designated that it can assume horizontal position against all angles of use of the ladder.
- (2) The width of the ladder shall be 450 mm or more.
- (3) The height of handrail shall be 1,000 mm, and intermediate handrails shall be provided at half height thereof.
The handrail stanchions shall be spaced at 1,500 mm or less.
- (4) The handrails shall be of such shape and dimensions that they can be easily used. When ropes are used in place of handrails, they shall, as a rule, be of fibre ropes of outside diameter 22 mm ensleeved in plastics.
- (5) The steps shall be spaced approximately at 350 mm, and they shall be provided with non-slip.
- (6) Steel parts shall be galvanized by hot dipping or shall be adequately treated for preventing corrosion.
- (7) The contact faces between steel parts and aluminium alloy parts shall be coated with appropriate paint, or adequate insulation materials shall be inserted for the protection of galvanic actions.

5. Materials The materials of the ladders shall be as given in **Table 2** or at least the equivalent.

Table 2

No.	Component	Material
1	Main member	JIS G 3101-SS 400 or JIS H 4100-A5052S
2	Step	Steel plate or JIS H 4100-A5052S or -A6063S
3	Back plating	Steel plate or JIS H 4000-A5052P
4	Top eye	JIS G 3101-SS 400
5	Handrail stanchion and socket	—
6	Handrail	—
7	Side roller	—

6. Appearance The surfaces of the ladders shall be free from any such defect as deformation and flaw which are detrimental to actual use, and shall be of good finish.

7. Strength The strength of the ladders shall be as follows:

- (1) The safety factor of the main member of the ladder, when a concentrated load of 1 470 N is applied at the central point between the top eye pin and lifting point or the centre of the lower platform shall be 2 or more against the yield point for steel or against 0.2% proof stress for aluminium alloy respectively.
The maximum deflection shall be 1/100 or less of the distance between the support points for steel, or 1/75 or less, for aluminium alloy.
- (2) The handrails and handrail stanchions shall withstand a uniformly distributed load of 500 N/m in lateral direction imposed on the upper handrail.
- (3) The steps shall withstand a central point load of 735 N.
- (4) The upper and lower platforms shall withstand a uniformly distributed load of 4 000 N/m².
The upper platform frames and their supports shall be capable of withstanding a combined load of the weight of the ladder and the load given in (1) above imposed thereon.

8. Tests and inspection

8.1 Appearance inspection The ladders shall be subjected to visual inspection, and shall satisfy the requirements of 6.

8.2 Strength inspection The strength inspection shall be carried out in accordance with the following requirements:

- (1) The maximum deflection of the main member of the ladder, when subjected to the test load given in 7.(1), shall satisfy the requirements in 7.(1).
When the test load is removed, there shall be no permanent set at each part of the ladder.
- (2) When a concentrated test load corresponding to the load given in 7.(2) is applied to the top of the handrail stanchion in lateral direction and then removed, there shall be no abnormality such as permanent set.
- (3) When the test loads given in 7.(3) and 7.(4) are applied to the steps and platforms and then removed, there shall be no abnormality such as permanent set.

9. Designation The ladders shall be designated by the title, class and nominal length of ladder (L). JIS number may be used in place of the title.

Example: Pilot accommodation ladder, S, 5 m or JIS F 2622-S-5 m

10. Marking 1 470 N (the maximum permissible load) and manufacturer's name or mark shall be marked on a readily visible part of the main member.