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भारतीय मानक मसौदा

वायुयान — पैलेट डॉली— प्रकार्यात्मक अपेक्षाएं

(पहला पुनरीक्षण)

Draft Indian Standard

AIRCRAFT-PALLET DOLLEY FUNCTIONAL REQUIREMENTS

(First Revision)

ICS: 49.100

Air and Space Vehicles Sectional Committee, TED 14 **Last date for receipt of comments is**
28/08/2024

FOREWORD

(Formal Clause to be added later)

This standard was first published in 1983. The present revision has been taken up with a view to incorporating the modifications found necessary as a result of experience gained on the use of this standard. Also, in this revision, the standard has been brought into the latest style and format of Indian Standard, and references to Indian Standards, wherever applicable have been updated. The following major modification has been incorporated in this revision of the standard:

- a) The shape and dimensions of the trolley are revised;
- b) Tolerances on the dimensions included; and
- c) Performance tests included.

In jute industries, special trolleys are required for carrying jute bales from go down to batch house. These are of light construction intended to give satisfactory service over a long period.

The composition of the committee responsible for the formulation of this standard in Annex A will be added later.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard***AIRCRAFT-PALLET DOLLEY FUNCTIONAL REQUIREMENTS***(First Revision)***1 SCOPE**

This standard lays down the functional requirements for a drolley capable of moving unit load devices (ULDs) conforming to IS 7074 (Part 1).

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards.

<i>IS No</i>	<i>Title</i>
IS 7073 (Part 1) : 1973	Glossary of terms relating to air cargo pallets and containers: Part 1 Air cargo pallets
IS 7073 (Part 2) : 1983	Glossary of terms relating to air cargo pallets and containers: Part 2 Air cargo containers
IS 7074 : 1999	Air cargo equipment - Interline pallets (<i>second revision</i>)

3 DEFINITIONS

3.1 For the purpose of this standard, following terms and definitions in addition to terminology and definitions given in IS 7073 (Part 1) and IS 7073 (Part 2) shall apply.

3.2 Dolley — An equipment capable of moving unit load devices (ULD) between baggage/cargo loading facilities at passenger terminal or cargo warehouse and aircraft position and vice-versa.

4 GENERAL REQUIREMENTS

4.1 The container drolley shall be designed for hauling four fully loaded dollies at a time in a train. The length of the drolley shall be adequate to avoid any interference of ULDs on two adjacent dollies.

4.2 The drolley shall have four-wheel running gear, pulled and steered through an integral towbar.

4.2.1 The wheels, two in the front and two at the rear, shall be mounted on independent axles.

4.3 The drolley shall be fitted with a towbar at the front and a tow hitch at the rear. These shall be of sufficient strength to allow for four fully loaded dollies to be towed in a train.

4.4 The towbar shall swivel in the vertical plane and shall be designed to prevent the towbar from touching the ground and the drolley itself.

4.4.1 The towbar shall be designed to be usable within the eye height range over the ground between 305 mm and 406 mm.

4.5 The geometry of the drolley steering system shall be such that when the dollies are towed in train they follow a true track.

4.6 All components of the running gear shall be within the confines of the frame.

4.7 All steering linkages, brake system components or other mechanisms located on the underside of the dolly shall be protected from damage.

4.8 All tongues, pintles and chassis frames shall be designed to take frequent impact loads.

4.9 Reflective material or fluorescent painting shall be used to make the towbar visible in poor lighting conditions.

4.10 The dolly shall have adequate clearance from any portion of the equipment to the ground when negotiating two ramps intersecting at 5 degrees.

5 PLATFORM

5.1 The dolly shall be provided with a roller platform at a height of 508 mm to carry one pallet. The platform shall allow fore/aft longitudinal movement of lower deck ULDs.

5.2 The platform design shall also permit manual movement of ULDs.

5.3 In order to ease the transfer of ULDs to/from the platform and to absorb the initial impact load, lead-on rollers shall be provided that have the maximum possible diameter commensurate with design.

5.4 Guide rails 50 mm high shall be provided along both sides of the platform.

5.5 Retractable stops with vertical restraints shall be provided at each end of the platform to firmly restrain the ULD base on the platform.

5.6 The height of the top of the restraint device, measured from the top of the roller surface shall not exceed 50 mm

5.7 The retractable stops shall be operatable by one man from both sides of the dolly.

5.8 The overall dimensions of the dolly shall be kept to a minimum. The length of the dolly shall be adequate to avoid any interference of ULDs on two adjacent dollies.

5.9 The dolly shall have a towbar fitted at the front and a tow hitch at the rear of sufficient strength to allow for four fully loaded dollies to be towed in a train.

5.10 The towbar shall swivel in the vertical plane.

5.11 The towbar shall be designed to be usable within the eye height range over the ground between 305 mm and 406 mm.

5.12 Consideration for stops to prevent the towbar from contacting the ground and from contacting the dolly itself should be given.

5.13 Reflective material of fluorescent painting shall be used to make the towbar visible in poor lighting conditions.

5.14 The dolly shall have adequate under clearance from any portion of the equipment to the ground when negotiating two ramps which intersect at 5 degrees.

5.15 The force required to actuate any lever or towbar shall not exceed 15 kgf.

5.16 Two walkways, not less than 395 mm wide and having antiskid surface, shall be provided on the platform.

6 MOBILITY

6.1 The dolly shall be capable of being towed at speeds up to 15 km/h.

6.2 The minimum turning radius of a train of four dollies shall not exceed 10 m.

6.3 The dolly shall be provided with a parking brake.

6.4 The brake shall be applied by placing and locking the towbar in the down position.

6.5 The brake shall be self-equalising and shall be capable of locking each wheel against a tangential force, applied at the periphery of the wheel, in either direction, which is equal to the gross weight of fully loaded trolley divided by the number of braked wheels.

6.6 The brake system shall be able to hold the above weight on a 10 percent gradient.

7 CONFIGURATIONS

The dollies shall be designed with following transfer and towing configurations:

- a) End towing — 1) Side transfer
2) End transfer
- b) Side towing — 1) Side transfer
2) End transfer

8 OPTIONS

Following facilities may also be provided if required by purchaser:

- a) Indexing fingers on one transfer side or end respectively to ease powered transfer from/ onto a pallet transporter;
- b) Higher towing speed;
- c) Additional stops and guides to accommodate ULDs with base dimensions other than those mentioned in IS 7074 (Part 1);
- d) Omni-directional conveyor platform; and
- e) Independent operation of brake system, for example pedal or lever operated brakes.

9 MARKING

The following details shall be marked on a plate which will be affixed to dolly at a visible place:

- a) Manufacturer's name, initials or recognized trade-mark, if any;
- b) Towing speed;
- c) Size of dolly; and
- d) Towing weight.

9.1 BIS CERTIFICATION MARKING

The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

ANNEX A
(Composition)

Air and Space Vehicles Sectional Committee Sectional Committee
Will be added later