

INTER PLANT STANDARD - STEEL INDUSTRY



SPECIFICATION FOR TRAILERS (SECOND REVISION)

IPSS:1-07-026-97

NO CORRESPONDING INDIAN STANDARD AVAILABLE
Formerly: IPSS:1-07-026-92

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0. FOREWORD

- 0.1 This Inter plant Standard, prepared by the Standards Committee on Paints and Portable Maintenance Equipment, IPSS 1:7 with the active participation of representatives of all the steel plants and established manufacturers of Trailers, was adopted in August 1997.
- 0.2 This Standard was first published in the year 1985. The first revision of the standard has been published in the year 1992 taking into consideration the difficulties faced by the manufacturers regarding the availability of the material for leaf springs for 5 & 10 T trailers. The second revision was carried out as problems were faced in supplies and some of the dimensions at Table 1 have accordingly been modified.

1. SCOPE

- 1.1 This standard gives the technical requirements for the trailers of 1, 2, 5 and 10 tonnes load carrying capacity to be hauled by tractor and used for transporting materials, at a maximum speed of 25 km/h.

2. MAXIMUM CAPACITY

- 2.1 The maximum load carrying capacity of the trailers shall be 1.25 times the specified load carrying capacity.

3. DIMENSIONS

- 3.1 The overall dimensions of the trailers shown in Fig.1 shall be as given in Table 1.

4. CHASSIS

- 4.1 The chassis shall be fabricated from rolled steel channel with cross members. As the load will be concentrated on certain areas depending upon the material transported, the spacing of the cross members shall be close enough to prevent the distortion of the top plate.

5. PLATFORM

- 5.1 The platform shall preferably be of minimum 6 mm thick chequered plate. Plain mild steel plate if used, shall be welded with 25 x 6 mm flats at 225 mm centres. The platform shall be fitted to the chassis by welding or by means of 10 mm CSK bolts at 450 centres. Four wooden sleepers of size 200 x 300 x F mm (for dimension 'F' refer Table 1) for both 5 and 10 tonne shall be firmly fitted on to the platform at equal distance.
- 5.2 On other side of the platform, lashing hooks shall be provided at an equal distance (75/1200 mm for 10/5 T respectively).

- 5.3 On either side of the platform, six numbers of stanchion rods shall be fixed at an equal distance of 1200 mm to prevent sliding of materials on the sides.

6. SIDE BOARD

- 6.1 The front board (tow hook side) shall be rigidly fixed to the platform. The lengthwise and rear side board shall be on the hinges. Those shall be fabricated from 3.15 mm thick sheet reinforced with 6 mm angles size 50x50 mm. The side boards and rear board shall be secured on top by a pin type fastening arrangement with a chain tied to the pin.

7. TURNTABLE

- 7.1 The turntable shall be easily maneuverable. The pivot pin for the turntable shall be of adequate size and hardened at the journal portion. It shall have a lock nut and split pin at the bottom to prevent the separation of the turntable after assembly. Provision shall be made for preventing entry of dirt or water into the pivot bearings.

8. DRAW BAR

- 8.1 The draw bar shall be of box type fabricated from rolled steel channel conforming to IS 2062:1992, Grade-A Steel for general structural purposes (fourth revision). The hinges shall have adequate bearing area and shall have hardened steel bushes and pins.

9. TOW HOOK

- 9.1 The tow hook shall be forged from 40 mm diameter round steel and shall be spring loaded. The eye in the tow hook shall suit a 50 mm diameter pin of the towing equipment. The details of eye hook shall be as per IS 12807:1989.

10. SPRINGS

- 10.1 The trailer shall be fitted with semi-elliptical laminated leaf springs on both the front and rear axles of size:

650 mm X 7 leaves for 1T and
750 mm X 12 leaves for 2T

- 10.2 The trailer shall be fitted with semi-elliptical laminated leaf main springs having the following specification for 5 and 10 tonne trailers:

		<u>5 tonne trailer</u>	<u>10 tonne trailer</u>
Size of leaf	(Main)	70 x 11 mm	70 x 11 mm
	(Aux)	-	70 x 8 mm
No. of leaves	(Main)	12	14
	(Aux)	-	9
Span	(Main)	1270 mm	1270 mm
	(Aux)	-	800 mm

11. WHEEL EQUIPMENT

- 11.1 The 1 tonne and 2 tonne trailer shall be fitted with four wheels. The tyres and tubes shall be of size:

7.50 x 16 x 10 ply rating for 2T and
6.00 x 16 x 10 ply for 1T.

The rim shall be 5.50 x F x 16. The hubs shall be of forged steel and fitted with tapered roller bearing, oil seals and dust covers. The axles shall be made from 63 mm square or billet. The size, type number, and make of tapered roller bearings shall be furnished by the manufacturer.

- 11.2 The 5 tonne trailer shall be fitted with 4 wheels. The tyres shall be of size 9 x 20 x 14 PR(N) ply rating. The rims shall be B 7.0 x 20. The hubs shall be of forged steel and fitted with tapered roller bearings, oil seals and dust covers. The axle for 5 tonne capacity trailer shall be made from 75 mm size billet conforming to steel designation 40 CB of IS 1570 (Part 2):1979 and axle for 10 tonne trailer shall be made either from 100 mm size billet or 100 mm round conforming to steel designation 40 CB of IS 1570 (Part 2):1979.

The size, type, bearing number and make of the tapered roller bearing shall be furnished by the manufacturer.

- 11.3 In the 10 tonne trailer, eight wheels shall be fitted.

12. BRAKES

- 12.1 All the trailers shall be fitted with independent over-run hydraulic brake system with mechanical parking brake accessories to facilitate coupling the trailers with all sorts of propelling vehicles without separately connecting the over-run brake system.

13. PAINTING

- 13.1 The trailer shall be painted with anti-corrosive bituminized black paint on the under carriage and inside the box, and the remaining portion shall be painted with synthetic enamel of paint of golden yellow colour on top of primer.

14. LUBRICATION FITTINGS

- 14.1 Grease nipples of 1/4 inch BSP size conforming to IS 4009 (Part 1):1981 'Specification for grease nipples: Part 1 Button head grease nipples (first revision)' shall be fitted at the following points for lubrication:

- a) Wheel bearings,
- b) Turntable pivot,
- c) Leaf spring hinges,
- d) Draw bar hinges, and
- e) Tow hook guide

15. ACCESSORIES

15.1 The trailer shall be provided with the following accessories:

- a) Two static red glass reflectors;
- b) One 'T' reflector on the rear;
- c) One tail lamp with wires, sockets and switch to be operated by tractor brake pedal;
- d) Two number-plates
- e) Locking arrangement for the turntable for the straight path movement of trailer while reversing;
- f) A bracket welded on the rear on the chassis for coupling to an identical trailer;
- g) Tool box with associated tools;
- h) One stepney bracket; and
- j) Rim (optional).

16. REGISTRATION

- 16.1 The manufacturer shall ensure the trailer complies with the requirement of Chapter 5 of Motor Vehicle Act, 1939 or the Rule made there under.
- 16.2 The manufacturer shall furnish the sale letter 'F' for the purpose of the registration.
- 16.3 The manufacturer shall furnish the following details along with the trailer:

- a) Type of the body;
- b) Maker's name;
- c) Year of manufacture;
- d) Maker's classification;
- e) Wheel base;
- f) Chassis number;
- g) Unladen weight in kg;
- h) Maximum laden weight as certified by the manufacturer in kg; and
- j) Maximum axle weight: Front wheelkg
Rear wheel.....kg.

17. GUARANTEE

- 17.1 The manufacturer shall guarantee satisfactory performance for one year of operation.

TABLE 1
DIMENSIONS OF THE TRAILER
(Ref Clause 3)

Item	1 Tonne	2 Tonnes	5 Tonnes	10 Tonnes
A	1650 \pm 100	3000 \pm 100	3600 \pm 100	6000 \pm 100
B	950 \pm ₀ ⁵⁰	1750 \pm ₀ ⁵⁰	2100 \pm ₀ ⁵⁰	4350 \pm ₀ ⁵⁰
C	400	400	400	400
D	900	975 \pm _C ²⁵	1331 \pm ₀ ⁵⁰	1381 \pm ₀ ⁵⁰
E	1000	1400	1420	1420
F	1150 \pm 50	1500 \pm 50	1800 \pm 50	2100 \pm 50
G	900 \pm ₀ ²⁵	1220 \pm ₀ ²⁵	1400 \pm ₀ ²⁵	1500 \pm ₀ ²⁵
*H	200	200	200	200
J	800 \pm ₀ ²⁵	875 \pm _C ²⁵	1150 \pm ₀ ⁵⁰	1150 \pm ₀ ⁵⁰

* The tow hook shall be clear off the ground by 200 mm.

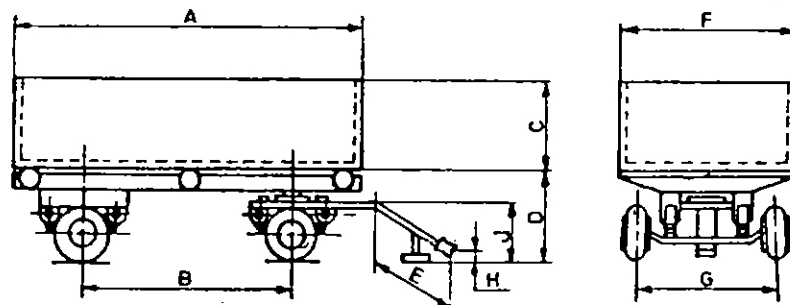


FIG. 1 GENERAL ARRANGEMENT OF TRAILER