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स्वचालित वाहन — टाईप — शब्दावली

(पहला पुनरीक्षण)

Indian Standard

AUTOMOTIVE VEHICLES — TYPES — TERMINOLOGY

(First Revision)

ICS 43.040

B U R E A U O F I N D I A N S T A N D A R D S
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May 2011 **Price Group 4**

Automotive Body, Chassis, Accessories and Garage Equipments Sectional Committee, TED 6

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Automotive Body, Chassis, Accessories and Garage Equipments Sectional Committee had been approved by the Transport Engineering Division Council.

This standard was first published as IS 14272 (Part 1) : 1995 'Automotive vehicles — Types — Terminology: Part 1 Three and four wheelers'. Previously this standard was intended to be brought out in two parts. Now, this standard has been revised to cover all types of road vehicles including two wheelers and vehicles such as trailers, caravans and agricultural and forestry tractors, etc.

In the formulation of this standard considerable assistance has been derived from AIS-053 'Automotive vehicles — Types — Terminology', and ISO 3833-1977 'Road vehicles — Types — Terms and definitions'.

For terms, definitions and weights of vehicles, reference may be made to IS 11422 : 2001 'Terms and definitions of weights of two wheeled motor vehicles (*first revision*)'.

Indian Standard

AUTOMOTIVE VEHICLES — TYPES — TERMINOLOGY

(First Revision)

1 SCOPE

This standard defines types and terminology relating to road vehicles based on their design and technical characteristics. The provisions of this standard apply to some types of vehicles designed for operation on road, namely, motor vehicle, towed vehicle, combination vehicles, agricultural tractor and construction equipment vehicle.

These definitions are intended for use in classifying the vehicles in the standards for specifying the technical requirements of the performance of the vehicle and its sub-assemblies.

2 REFERENCES

The following standards contain provisions which through reference in this text, constitute provisions 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 the standards indicated below:

IS No.	*Title*
9211 : 2003	Terms and definitions of weights of road vehicles other than 2 and 3 wheelers (*second revision*)
9435 : 2004	Terms and definitions relating to dimensions of road vehicles other than 2 and 3 wheelers (*first revision*)
12218 : 1987	Method of measurement of approach, departure and ramp angles of automotive vehicles
13988 : 2002	Automotive vehicles — Starting gradeability — Method of measurement (*first revision*)

3 TERMS AND DEFINITIONS

For the purpose of this standard the following terms and definitions shall apply.

3.1 Motor Vehicle — Motor vehicle or vehicle means any mechanically propelled vehicle adopted for use upon roads whether the propulsion is transmitted thereto from an external or internal source and includes a chassis to which body has not been attached and a trailer; but does not include a vehicle running upon fixed rails or a vehicle of special type adopted for use in factory or enclosed premises or a vehicle having less than four wheels fitted with engine capacity of not exceeding 25 cm^3.

3.1.1 *M Category* — A motor vehicle with at least four wheels used for carrying passengers.

3.1.1.1 *M1 category* — A vehicle used for carriage of passengers, comprising not more than eight seats in addition to the driver's seat.

Definitions of type of bodywork for passenger cars of M1 category are given in Annex A.

3.1.1.2 *M2 category* — A vehicle used for carriage of passengers, comprising nine or more seats in addition to the driver's seat, and having a maximum gross vehicle weight (GVW) not exceeding 5 t.

3.1.1.3 *M3 category* — A vehicle used for the carriage of passengers, comprising nine or more seats in addition to the driver's seat and having a GVW exceeding 5 t.

3.1.2 *N Category* — A motor vehicle with at least four wheels used for carrying goods. These vehicles can carry persons in addition to the goods subject to the conditions in **3.2** are met.

3.1.2.1 *N1 category* — A vehicle used for carriage of goods and having GVW not exceeding 3.5 t.

3.1.2.2 *N2 category* — A vehicle used for the carriage of goods and having a GVW exceeding 3.5 t but not exceeding 12 t.

3.1.2.3 *N3 category* — A vehicle used for the carriage of goods and having GVW exceeding 12 t.

3.1.3 *Off Road Vehicles (Cross Country Vehicles) — Symbol 'G'* — A vehicle of category M or N satisfying the requirements given **3.1.3.1** to **3.1.4**.

3.1.3.1 *N1 with GVW not exceeding 2 t and M1* — Vehicles in category N1 with GVW not exceeding 2 t and vehicles in category M1 are considered to be off-road vehicles, if they,

a) have at least one front axle and at least one rear axle designed to be driven simultaneously, including vehicles where the drive to one axle can be disengaged;

b) shall be capable of climbing a 30 percent gradient with vehicle in the solo condition (*see* **3.1.4.1**); and

c) have at least one differential locking mechanism or at least one mechanism having similar effect.

3.1.3.1.1 In addition, they shall satisfy at least five of the following six requirements (*see* **3.1.4.2**):

a) Approach angle shall be at least 25°;

b) Departure angle shall be at least 20°;

c) Ramp angle shall be at least 20°;

d) Ground clearance under the front axle shall be at least 180 mm;

e) Ground clearance under the rear axle shall be at least 180 mm; and

f) Ground clearance between the axles shall be at least 200 mm.

3.1.3.2 *N1 with GVW exceeding 2 t, N2, M2, or M3 with GVW not exceeding 12 t* — Vehicles in category N1 with GVW exceeding 2 t or in category N2, M2, or M3 with a GVW not exceeding 12 t are considered to be off-road vehicles either if all their wheels are designed to be driven simultaneously, including vehicles where the drive to one axle can be disengaged, or if the following three requirements are satisfied:

a) At least one front axle and at least one rear axle are designed to be driven simultaneously including vehicles where the drive to one axle can be disengaged;

b) There is at least one differential locking mechanism or at least one mechanism having a similar effect; and

c) They shall be capable of climbing a 25 percent gradient with vehicle in the solo condition (*see* **3.1.4.1**).

3.1.3.3 *M3 with GVW exceeding 12 t and N3* — Vehicles in category M3 with a gross vehicle weight (GVW) exceeding 12 t or in N3 are considered to be off-road vehicles either if the wheels are designed to be driven simultaneously, including vehicles where the drive to one axle can be disengaged, or if the following requirements are satisfied:

a) At least half the wheels are driven;

b) There is at least one differential locking mechanism or at least one mechanism having a similar effect; and

c) They shall be capable of climbing a 25 percent gradient with vehicle in the solo condition (*see* **3.1.4.1**).

3.1.3.3.1 In addition to the above, at least four of the following six requirements are satisfied (*see* **3.1.4.2**):

a) Approach angle shall be at least 25°;

b) Departure angle shall be at least 25°;

c) Ramp angle shall be at least 25°;

d) Ground clearance under the front axle shall be at least 250 mm;

e) Ground clearance between the axles shall be at least 300 mm; and

f) Ground clearance under the rear axle shall be at least 250 mm.

3.1.4 *Conditions for the Above*

3.1.4.1 *Gradeability*

a) The solo condition of the vehicle means the vehicle in the Kerb weight condition (as defined in IS 9211) + 75 kg; and

b) The test procedure for gradeability shall be as given in IS 13988, except for the loading condition, which shall be as specified in this standard.

3.1.4.2 *Ground clearance, approach angles, etc*

a) In the case of vehicles covered in **3.1.3.1**, the requirements given in **3.1.3.1.1** shall be checked with the vehicle in solo condition;

b) In the case of vehicles covered in **3.1.3.3**, the requirements given in **3.1.3.3.1** shall be checked with the vehicle loaded to its gross vehicle weight;

c) When measuring approach and departure angles and ramp angles, no account is taken of under-run protective devices; and

d) For definitions and method of measurement of ground clearance, approach angles, etc (*see* IS 9435 and IS 12218).

3.1.5 *Combined Designation* — Symbol G for indication of off road vehicles (Cross country vehicles) shall be combined with either symbol M or N. For example, a vehicle of category N1, suitable for cross-country use shall be designated as N1G.

3.1.6 *Special Purpose Vehicles* — A vehicle of category M, N or T for carrying passengers or goods and for performing a special function for which special body arrangements and/or equipment are necessary.

3.1.6.1 *Motor caravan* — A special purpose M category vehicle constructed to include living accommodation that contains at least the following equipment:

a) Seats and table;

b) Sleeping accommodation which may be converted from the seats;

c) Cooking facilities; and

d) Storage facilities.

This equipment shall be rigidly fixed to the living compartment; however, the table may be designed to be easily removed.

3.1.6.2 *Armoured vehicle* — A vehicle intended for protection of conveyed passengers and/or goods and complying with armour plating anti-bullet requirements.

3.1.6.3 *Ambulance* — A vehicle of category M intended for the transport of sick or injured people and having special equipment for such purpose.

3.1.6.4 *Hearse* — A motor vehicle intended for the transport of deceased people and having special equipment for such purpose.

3.2 Classification under M/N Categories

A vehicle which is designed to carry persons in addition to goods shall be considered as N category vehicle, if the following conditions are met:

a) Number of seating positions excluding the driver is not more than six;

b) A seating position shall be regarded as existing if the vehicle is provided with accessible seat anchorages;

NOTE — Accessible shall mean those anchorages, which can be used. In order to prevent anchorages being accessible, the manufacturer shall physically obstruct their use, for example, by welding over cover plates or by fitting similar permanent fixtures which cannot be removed by use of normally available tools.

c) The weight of goods carried by the vehicle is more than weight of persons carried, as calculated by following formula:

$$P - (A + B \times 68) > B \times 68$$

where

P = technically permissible maximum laden weight (GVW), in kg;

A = vehicle weight in the kerb weight condition (as defined in IS 9211) + 68 kg; and

NOTE — In the case of electric vehicles, the weight of traction batteries is to be subtracted from the kerb weight.

B = number of seating positions excluding the driver.

3.3 Category T-Towed Vehicle (Trailers)

3.3.1 A non-self propelled driven road vehicle having at least two wheels which on account of its design and technical features is used to transport persons or goods and is intended to be towed by a motor vehicle; semi-trailer is included in this category.

A full trailer means a towed vehicle having at least two axles, and equipped with a towing device which can move vertically in relation to the trailer and controls the direction of the front axle(s), but which transmits no significant static load to the towing vehicle.

Centre-axle trailer means a towed vehicle, equipped with a towing device which cannot move vertically (in relation to the trailer) and in which the axle(s) is (are) positioned close to the centre of gravity of the trailer (when uniformly loaded) such that only a small static vertical load, not exceeding 10 percent of that corresponding to the maximum mass of the trailer or a load of 1 000 daN (whichever is lesser) is transmitted to the towing vehicle.

A semi-trailer means a trailer, which is intended to be connected to a motor vehicle and which is so constructed that a portion of it is superimposed on and a part of whose weight is borne by the haulage tractor.

In case of a semi-trailer or centre-axle trailer, the maximum mass to be considered for classifying the trailer corresponds to the static vertical load transmitted to the ground by the axle or axles of the semi-trailer or centre-axle trailer when coupled to the towing vehicle and carrying its maximum load.

3.3.1.1 *T1 category* — A trailer having a maximum weight not exceeding 0.75 t.

3.3.1.2 *T2 category* — A trailer having a maximum weight exceeding 0.75 t but not exceeding 3.5 t.

3.3.1.3 *T3 category* — A trailer having a maximum weight exceeding 3.5 t but not exceeding 10 t.

3.3.1.4 *T4 category* — A trailer having a maximum weight exceeding 10 t.

3.3.1.5 *T5 category* — A semi-trailer intended to be drawn by a three-wheeled haulage tractor.

3.4 Combination of Vehicles — A motor vehicle as defined in **3.1** coupled with one or more towed vehicles as defined in **3.3**. Various combinations are illustrated in Annex B.

3.5 Haulage Tractor — A vehicle constructed essentially for hauling another vehicle, namely a semi-trailer or trailer.

A tractor may have provision for carrying load, in addition to hauling a vehicle, especially in the case of tractors hauling a trailer.

In case of vehicles designed to be coupled to a semi-trailer, the GVW to be taken into consideration when classifying that vehicle, shall be the maximum weight of the tractor in running order, the weight carried in the tractor, if any, plus the weight transferred to the tractor by the laden semi-trailer in static condition.

3.6 L5 Category—Three-Wheeler — A three wheeled motor vehicle with maximum speed exceeding 25 km/ph and engine capacity exceeding 25 cc, if fitted with a thermic engine, or motor power exceeding 0.25 kW, if fitted with electric motor. This vehicle is normally used for,

a) carrying persons; or
b) carrying goods.

Semi-trailer may be attached, and where;

a) handle bar or steering wheel may be fitted;
b) gross vehicle weight will be limited to 1 500 kg, subject to the conditions given in (4);
c) in the case of semi-trailers being attached to a three wheeled tractor, the gross combination weight will be limited to 2 500 kg subject to the conditions given in (4); and
d) weight of traction batteries in the case of battery operated three wheelers, shall not be taken into account for the limitation the GVW/ GCW and for the purpose of classification.

3.6.1 *L5M Category—Passenger Carrier (Auto-Rickshaw)* — A three-wheeler on account of its technical features intended to carry passengers.

3.6.2 *L5N Category—Goods Carrier* — A three-wheeler on account of its technical features intended to carry goods.

3.6.3 A three-wheeler may fall under the category of L5M [Passenger carrier (Auto-rickshaw)] or L5N (Goods carriage) depending on whether the weight of persons including driver for whom seating arrangements are provided is more than or less than the weight of goods carried.

If the following conditions are satisfied, a three wheeler comes under the category of L5N (Goods carriage) and not L5M [(Passenger carrier (Auto-rickshaw)]:

a) A separate load body or compartment is provided for carrying the goods;
b) Number of seating positions excluding the driver is not more than three; and
c) Weight of goods carried by the vehicle is more than weight of persons carried, as calculated by following formula:

$$P - (A + B \times 68) > B \times 68$$

where

P = technically permissible maximum laden weight (GVW), in kg;

A = vehicle weight in the Kerb weight condition (as defined in IS 9211) + 68 kg; and

B = number of seating positions excluding the driver.

NOTE — In the case of electric vehicles, the weight of traction batteries is to be subtracted from the Kerb weight.

3.7 Two-Wheeler — A two wheeled motor vehicle with maximum speed exceeding 25 km/h and engine capacity exceeding 25 cc, if fitted with a thermic engine, or motor power exceeding 0.25 kW, if fitted with electric motor.

The seating capacity is limited to two persons.

A side car may be attached to a two-wheeler. The seating capacity of the side car will be limited to one person.

3.7.1 *L1 Category* — A two-wheeler with maximum speed not exceeding 45 km/h and engine capacity not exceeding 50 cc, if fitted with a thermic engine or motor power not exceeding 0.5 kW, if fitted with electric motor.

3.7.2 *L2 Category* — A two-wheeler other than L1 category.

3.8 A Category

3.8.1 *Agricultural and Forestry Tractor* — A power-driven vehicle, either wheeled or track laying, which has at least two axles, whose function depends essentially on its tractive power, and which is specially designed to pull, push, carry or actuate certain implements, machines or trailers intended for use in agriculture or forestry.

Such a tractor may be arranged to carry load and attendants.

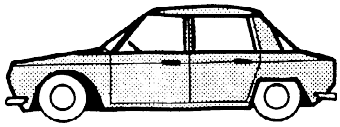
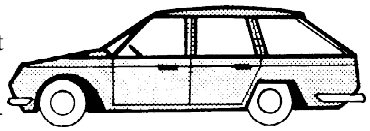
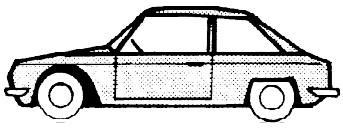
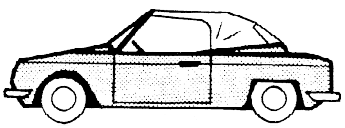
3.9 C Category

3.9.1 *Construction Equipment Vehicle* — Means rubber tyred (including pneumatic tyred), rubber padded or steel drum wheel mounted, self propelled, excavator, loader, backhoe, compactor roller, dumper, motor grader, mobile crane, dozer, fork lift truck, self loading concrete mixer or any other construction equipment vehicle or combination thereof designed for off-highway operations in mining, industrial undertaking, irrigation and general construction but modified and manufactured with on or off or on and off highway capabilities.

ANNEX A

(*Clause* 3.1.1.1)

DEFINITION OF TYPE OF BODY WORK FOR PASSENGER CARS (M1) (ONLY FOR COMPLETE/COMPLETED VEHICLES)

Sl No.	*Term*	*Definition*	*Drawing*
(1)	(2)	(3)	(4)
i)	**AA Saloon**	a) *Body* — Closed with or without central pillar to side window. b) *Hood/Roof* — Fixed, rigid roof. A portion of the roof may however be openable. c) *Accommodation* — 4 or more seats in at least 2 rows. d) *Doors* — 2 or 4 side doors. There may also be a rear opening. e) *Windows* — 4 or more side windows.	
ii)	**AB Hatchback**	Saloon (AA) with a hatch at the rear end of the vehicle.	
iii)	**AC Station Wagon**	a) *Body* — Closed. Rear shape is designed in order to give a larger interior volume. b) *Hood/Roof* — Fixed, rigid roof. A portion of the roof may however be openable. c) *Accommodation* — 4 or more seats in at least 2 rows. The row or rows of seats may have forward-foldable backs or be removable to provide a load platform. d) *Doors* — 2 or 4 side doors and a rear opening. e) *Windows* — 4 or more side windows.	
iv)	**AD Coupé**	a) *Body* — Closed. Usually, limited rear volume. b) *Hood/Roof* — Fixed, rigid roof. A portion of the roof may however be openable. c) *Accommodation* — 2 or more seats in at least 1 row. d) *Doors* — 2 side doors. There may also be a rear opening. e) *Windows* — 2 or more side windows.	
v)	**AE Convertible**	a) *Body* — Openable. b) *Hood/Roof* — The roof, soft or rigid, at least 2 positions: in the first one it covers the body; in the second one it is retracted. c) *Accommodation* — 2 or more seats in at least 1 row. d) *Doors* — 2 or 4 side doors. e) *Windows* — 2 or more side windows.	

ANNEX B

(*Clause* 3.4)

ILLUSTRATIONS REGARDING TRAILERS AND VEHICLE TRAINS

B-1 TRAILER TOWING VEHICLE

A motor vehicle designed for towing trailers. It may carry goods on a load body/platform (*see* Fig. 1).

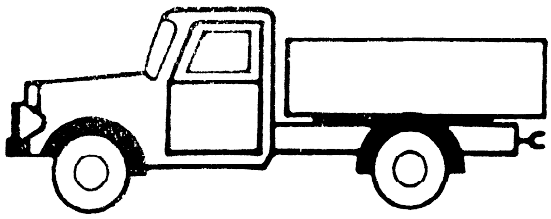


FIG. 1 TRAILER TOWING VEHICLE

B-2 SEMI-TRAILER TOWING VEHICLE

A motor vehicle designed for towing semi-trailer (*see* Fig. 2).

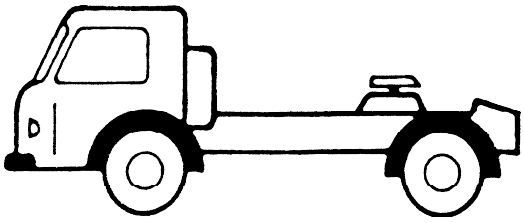


FIG. 2 SEMI-TRAILER TOWING VEHICLE

B-3 BUS TRAILER

Trailer intended for carrying passengers (*see* Fig. 3).

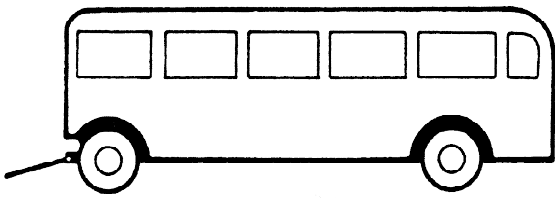


FIG. 3 BUS TRAILER

B-4 GENERAL PURPOSE TRAILER

Trailer intended for carrying goods (*see* Fig. 4).

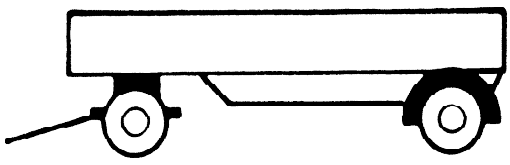


FIG. 4 GENERAL PURPOSE TRAILER

B-5 CARAVAN

Trailer which is designed for road use and provides mobile living accommodation (*see* Fig. 5).

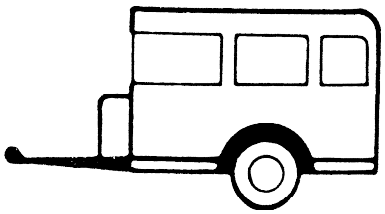


FIG. 5 CARAVAN

B-6 BUS SEMI-TRAILER

A semi-trailer intended for carrying passengers (*see* Fig. 6).

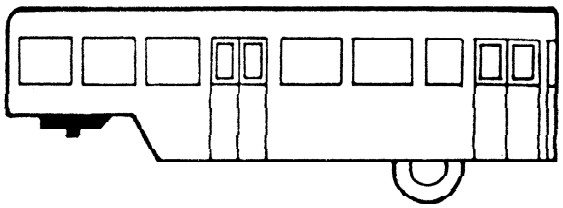


FIG. 6 BUS SEMI-TRAILER

B-7 GENERAL PURPOSE SEMI-TRAILER

A semi-trailer intended for carrying goods (*see* Fig. 7).

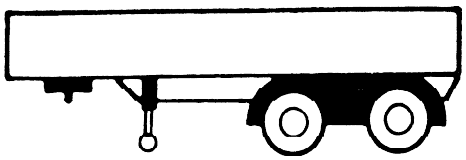


FIG. 7 GENERAL PURPOSE SEMI-TRAILER

B-8 ROAD TRAIN

Combination of a motor vehicle with one or more independent trailers connected by a draw bar (*see* Fig. 8).

B-9 PASSENGER ROAD TRAIN

Combination of a bus with one or more independent trailers connected by a draw bar for passanger transportation. The passenger accommodation space is not continuos throughout the combination (*see* Fig. 9).

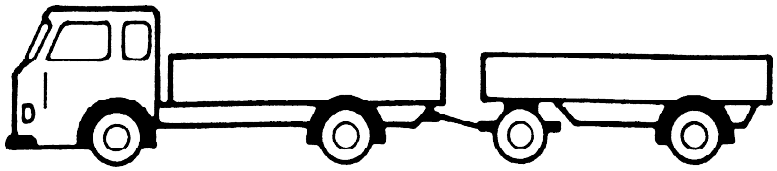


FIG. 8 ROAD TRAIN

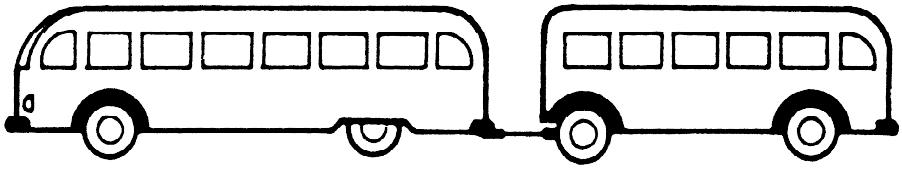


FIG. 9 PASSENGER ROAD TRAIN

B-10 ARTICULATED BUS

A bus which is composed of two rigid sections connected by an articulated joint, with passenger accommodation spaces situated in each rigid section communicate. The free circulation of passengers from one rigid section to the other is assured through the articulated joint (*see* Fig. 10).

B-11 ARTICULATED ROAD TRAIN

A combination of semi-trailer-towing vehicle with a semi-trailer (*see* Fig. 11).

B-12 DOUBLE ROAD TRAIN

A combination of semi-trailer-towing vehicle with a semi-trailer and a trailer (*see* Fig. 12).

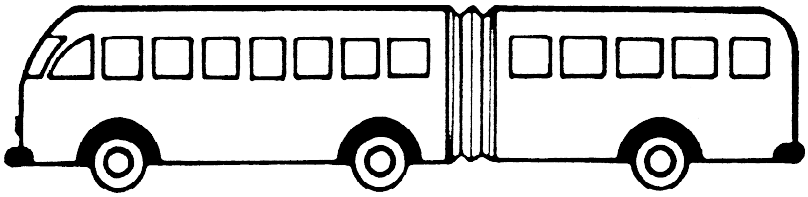


FIG. 10 ARTICULATED BUS

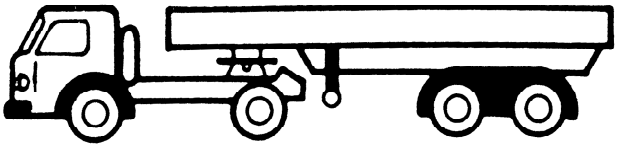


FIG. 11 ARTICULATED ROAD TRAIN

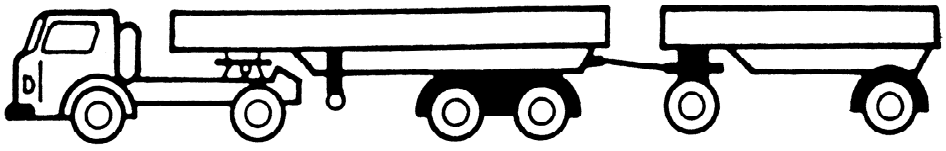


FIG. 12 DOUBLE ROAD TRAIN

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AMENDMENT NO. 1 DECEMBER 2012
TO
IS 14272 : 2011 AUTOMOTIVE VEHICLES — TYPES — TERMINOLOGY

(*Page* **4**, *clauses* **3.6** *and* **3.7**) — Substitute the following for the existing :

'3.6 CATEGORY L — Motor vehicles with less than four wheels.

3.6.1 L5 Category — Three-Wheeler — A three wheeled motor vehicle with maximum speed exceeding 25 km and engine capacity exceeding 25 cc, if fitted with a thermic engine, or motor power exceeding 0.25 kW, if fitted with electric motor. This vehicle is normally used for,

a) carrying persons; or
b) carrying goods.

Semi-trailer may be attached, and where,

1) handle bar or steering wheel may be fitted;
2) gross vehicle weight will be limited to 1 500 kg, subject to the conditions given in (4);
3) in the case of semi-trailers being attached to a three wheeled tractor, the gross combination weight will be limited to 2 500 kg subject to the conditions given in (4); and
4) weight of traction batteries in the case of battery operated three wheelers, shall not be taken into account for the limitation the GVW/ GCW and for the purpose of classification.

3.6.1.1 ***L5M Category*** *— Passenger Carrier (Auto-Rickshaw)* — A three-wheeler on account of its technical features intended to carry passengers.

3.6.1.2 ***L5N Category****—Goods Carrier* — A three wheeler on account of its technical features intended to carry goods.

3.6.1.3 A three-wheeler may fall under the category of L5M [Passenger carrier (Auto-rickshaw)] or L5N (Goods carriage) depending on whether the weight of persons including driver for whom seating arrangements are provided is more than or less than the weight of goods carried.

If the following conditions are satisfied, a three wheeler comes under the category of L5N (Goods carriage) and not L5M [(Passenger carrier (Auto-rickshaw)]:

a) A separate load body or compartment is provided for carrying the goods;

b) Number of seating positions excluding the driver is not more than three; and

c) Weight of goods carried by the vehicle is more than weight of persons carried, as calculated by following formula:

$$P = (A + B \times 68) > B \times 68$$

where

P = technically permissible maximum laden weight (GVW), in kg;

A = vehicle weight in the Kerb weight condition (as defined in IS 9211) + 68, in kg; and

B = number of seating positions excluding the driver.

NOTE — In the case of electric vehicles, the weight of traction batteries is to be subtracted from the Kerb weight.

3.6.2 Two-Wheeler — A two wheeled motor vehicle with maximum speed exceeding 25 km/h and engine capacity exceeding 25 cc, if fitted with a thermic engine, or motor power exceeding 0.25 kW, if fitted with electric motor.

The seating capacity is limited to two persons. A side car may be attached to a two-wheeler. The seating capacity of the side car will be limited to one person.

3.6.2.1 L1 Category — A two-wheeler with maximum speed not exceeding 45 km/h and engine capacity not exceeding 50 cc, if fitted with a thermic engine or motor power not exceeding 0.5 kW, if fitted with electric motor.

3.6.2.2 L2 Category — A two-wheeler other than L1 category.'

(*Page* 4, *clauses* **3.8** *and* **3.9**) – Renumber the clauses as **3.7** and **3.8**.

(*Page* 4, *clause* **3.9**) — Insert the following at the end of the clause:

'3.9 Hybrid Electric Vehicles (HEV) – Vehicle in which 'power train' comprises a combination of two different drive train types:

a) An internal combustion engine; and

b) One (or several) electric drive train(s).

HEV for the purpose of mechanical propulsion, draws energy from both of the following on-vehicle sources of stored energy/power:

1) A consumable fuel; and
2) An electrical energy/power storage device (for example battery, capacitor, flywheel/ generator.'

AMENDMENT NO. 2 MAY 2016
TO
IS 14272 : 2011 AUTOMOTIVE VEHICLES — TYPES — TERMINOLOGY

(First Revision)

(*Second cover page*, *Foreword*, *para* 3) — Substitute the following for the existing:

'In the formulation of this standard considerable assistance has been derived from AIS-053 'Automotive vehicles — Types — Terminology', ISO 3833-1977 'Road vehicles — Types — Terms and definitions' and Notification issued by 'Ministry of Road Transport & Highways' vide G.S.R. 99(E) dated 19th February, 2014.'

(*Page* 4, *clause* **3.9**) — Insert the following new clauses:

'**3.10 Category L7- Quadricycle**

A vehicle as per clause (2) of G.S.R. 99 (E).

3.10.1 *Category L7-M*

A quadricycle of category L7 used for carrying passengers, having seats not more than 4 (including driver) and kerb weight not exceeding 450 kg.

3.10.2 *Category L7-N*

A quadricycle of category L7 used for carrying goods, having seats not more than 2 (including driver) and kerb weight not exceeding 550 kg.

NOTE — Kerb weight of the vehicle referred in **3.10**, **3.10.1** and **3.10.2** shall be as per IS 9211 but does not include the following:

a) Weight of batteries in the case of electric/hybrid vehicles; or
b) Weight of gaseous fuel system including tanks for gaseous fuel storage in the case of mono, bi or multi-fuel vehicles.'

(TED 06)

Publication Unit, BIS, New Delhi, India

AMENDMENT NO. 3 JUNE 2019
TO
IS 14272 : 2011 AUTOMOTIVE VEHICLES — TYPES — TERMINOLOGY

(First Revision)

(*Page* 4, *clause* **3.6**) — Substitute the following for the existing clauses:

'**3.6 Category L** – Motor vehicles with less than four wheels and quadricycle.

3.6.1L5 Category – **Three-Wheeler** — A three wheeled motor vehicle with maximum speed exceeding 25 km and engine capacity exceeding 25 cc, if fitted with a thermic engine, or motor power exceeding 0.25 kW, if fitted with electric motor. This vehicle is normally used for,

a) carrying persons; or
b) carrying goods.

Semi-trailer may be attached, and where,

1) handle bar or steering wheel may be fitted;
2) gross vehicle weight will be limited to 1 500 kg, subject to the conditions given in **4**;
3) in the case of semi-trailers being attached to a three wheeled tractor, the gross combination weight will be limited to 2 500 kg subject to the conditions given in**4**; and
4) weight of rechargeable energy storage system (REESS) in the case of battery operated three wheelers, shall not be taken into account for the limitation the GVW/ GCW and for the purpose of classification

3.6.1.1 *L5M Category — Passenger carrier (auto-rickshaw)* — A three-wheeler on account of its technical features intended to carry passengers.

3.6.1.2 *L5N Category — Goods carrier* — A three wheeler on account of its technical features intended to carry goods.

3.6.1.3 A three-wheeler may fall under the category of L5M [Passenger carrier (Auto rickshaw)] or L5N (Goods carriage) depending on whether the weight of persons including driver for whom seating arrangements are provided is more than or less than the weight of goods carried.

If the following conditions are satisfied, a three wheeler comes under the category of L5N (Goods carriage) and not L5M [(Passenger carrier (Auto-rickshaw)]:

a) A separate load body or compartment is provided for carrying the goods;
b) Number of seating positions excluding the driver is not more than three; and
c) Weight of goods carried by the vehicle is more than weight of persons carried, as calculated by following formula:

$$P = (A + B \times 68) > B \times 68$$

where

P = technically permissible maximum laden weight (GVW), in kg;
A = vehicle weight in the Kerb weight condition (as defined in IS 9211) + 68, in kg; and
B = number of seating positions excluding the driver.

NOTE — In the case of electric vehicles, the weight of rechargeable energy storage system (REESS) is to be subtracted from the Kerb weight.

Price Group 3

Amendment No. 3 to IS 14272 : 2011

(*Page* 4, *clause* **3.8.1**) — Insert the following at the end of the clause:

'Category A comprises all wheeled tractors; each wheeled tractor category described in points **3.8.1.1** to **3.8.1.12** is supplemented at the end by an 'a' or 'b' index according to its design speed:

a) 'a' for wheeled tractors with a maximum design speed less than or equal to 40 km/h.

b) 'b' for wheeled tractors with a maximum design speed more than 40 km/h.'

(*Page* 4, *clause* **3.8.1**) — Insert the following new clauses:

'**3.8.1.1** *Category A 1,* comprises wheeled agricultural tractors, with the closest axle to the driver having a minimum track width of not less than 1 150 mm, with an unladen mass, in running order, of more than 600 kg, and with a ground clearance of not more than 1 000 mm.

3.8.1.2 *Category A 2,* comprises wheeled agricultural tractors with a minimum track width of less than 1 150 mm, with an unladen mass, in running order, of more than 600 kg, with a ground clearance of not more than 600 mm.

3.8.1.3 *Category A 3,* comprises wheeled agricultural tractors with an unladen mass, in running order, of not more than 600 kg.

3.8.1.4 *Category A 4,* comprises special purpose wheeled agricultural tractors.

3.8.1.4.1 *Category A 4.1 (high-clearance agricultural tractors)*, comprises tractors designed for working with high-growing crops, such as vines. They feature a raised chassis or section of chassis, enabling them to advance in parallel with the crop with left and right wheels on either side of one or more rows of the crop. They are intended for carrying or operating tools which may be fitted at the front, between the axles, at the rear or on a platform. When the tractor is in working position the ground clearance perpendicular to the crop rows exceeds 1 000 mm.

3.8.1.4.2 *Category A 4.2 (extra-wide agricultural tractors),* comprises tractors characterized by their large dimensions, primarily intended for working large areas of farmland.

3.8.1.4.3 *Category A 4.3 (low-clearance agricultural tractors),*comprises four-wheel drive tractors whose interchangeable equipment is intended for agricultural or forestry use and which are characterized by a supporting frame, equipped with one or more power take-offs, having a technically permissible mass no greater than 10 tonne , for which the ratio of this mass to the maximum un laden mass in running order is less than 2.5 and having the centre of gravity, measured in relation to the ground using the tyres normally fitted, of less than 850 mm.

3.8.1.5 *Hybrid agricultural tractor (A5),* means a powered Agricultural Tractor equipped with at least two different energy converters, and two different energy storage systems (on-vehicle) for the purpose of vehicle propulsion.

3.8.1.6 *Alternate-fuel gas agricultural tractors (A 5.1),* means a vehicle that is designed primarily for permanent running on LPG or NG/bio-methane or hydrogen, but may also have a petrol / Diesel system for emergency purposes or starting only, where the petrol tank does not contain more than 5 litre of petrol.

3.8.1.7 *Bi-fuel agricultural tractors (A 5.2),* means a vehicle with two separate fuel storage systems that is designed to run on only one fuel at a time. The simultaneous use of both fuels is limited in amount and duration.

3.8.1.8 *Bi-fuel gas agricultural tractors (A 5.3),* means a bi fuel vehicle that can run on petrol / diesel and also on either LPG, NG/bio-methane or hydrogen (gas mode).

3.8.1.9 *Alternative fuel agricultural tractors (A 5.4),* means a vehicle designed to be capable of running on at least one type of fuel that is either gaseous at atmospheric temperature and pressure, or substantially non-mineral oil derived.

3.8.1.10 *Flex fuel agricultural tractors (A5.5),* means a vehicle with one fuel storage system that can run on different mixtures of two or more fuels.

3.8.1.10.1 *Flex fuel ethanol agricultural tractors (A 5.5.1),* means a flex fuel vehicle that can run on petrol or a mixture of petrol and ethanol up to an 85/100 percent ethanol blend (E85/E100).

3.8.1.10.2 *Flex fuel biodiesel agricultural tractors (A 5.5.2),* means a flex fuel vehicle that can run on mineral diesel / petrol or a mixture of mineral diesel / petrol and bio-diesel.

3.8.1.11 *Hybrid electric agricultural tractor (A 6),* means an agricultural tractor that, for the purpose of mechanical propulsion, draws energy from both (a) and (b) of the following on-vehicle sources of stored energy/power:

a) consumable fuel.

b) a battery, capacitor, flywheel/generator or other electrical energy or power storage device.

This definition also includes agricultural tractor which draw energy from a consumable fuel only or Solar energy for the purpose of recharging the electrical energy/power storage device;

3.8.1.12 *Pure electric agricultural tractor (A7),*means an agricultural tractor powered by a system consisting of one or more electric energy including solar energy storage devices, one or more electric power conditioning devices and one or more electric machines that convert stored electric energy to mechanical energy delivered at the wheels for propulsion of the vehicle.'

[*Page* 4, *clauses* **3.10** to **3.10.2** (*see also Amendment No.* 2)] — Substitute the following for the existing clauses:

'**3.10 Category L7- Quadricycle** — A vehicle as per *Rule* (2) of *Central Motor Vehicle Rules,* 1989.

3.10.1 *Category L7-M* – A quadricycle of category L7 used for carrying passengers, having seats not more than 4 (including driver) and kerb weight not exceeding 475 kg.

3.10.2 *Category L7-N* – A quadricycle of category L7 used for carrying goods, having seats not more than 2 (including driver) and kerb weight not exceeding 550 kg.

NOTE — The weight shall not include :

a) Mass of rechargeable energy storage system (REESS) in the case of electric or hybrid vehicles; and

b) Mass of gaseous fuel system including tanks for gaseous fuel storage in the case of mono-fuel, bi-fuel or multi-fuel vehicles.'

[*Page* 4, *clause* **3.10.2** (*see also Amendment No. 2*)] — Insert the following new clauses at the end of the clause:

'**3.11 Special Purpose Vehicle (SPV) —** A vehicle of category L (only in case of road ambulance complying to AIS-125 (Part1)) M, N or T having specific technical features in order to perform a function which requires special arrangements and / or equipment.

3.12 Motor Caravan — A special purpose M category vehicle constructed to include living accommodation which contains at least the following equipment:

a) Seats and table;

b) Sleeping accommodation which may be converted from the seats;

c) Cooking facilities; and

d) Storage facilities.

This equipment shall be rigidly fixed to the living compartment; however, the table may be designed to be easily removable

3.13 Road Ambulance — Road ambulance or ambulance is a specially equipped and ergonomically designed vehicle for transportation / emergent treatment of sick or injured people and capable of providing out of hospital medical care during transit / when stationary, commensurate with its designated level of care when appropriately staffed.

3.14 School Bus — Vehicles with a seating capacity of 13 passengers and above excluding driver designed and constructed specially used for transporting children to and from schools.

3.15 Sleeper Coach –Vehicles with a seating capacity of 13 passengers and above excluding driver designed and constructed with additional provision/berth for passengers to sleep while travelling.

3.16 Twinned Wheels — In the case of L category vehicles, two wheels mounted on the same axle, the distance between the centres of their areas of contact with the ground is equal to or less than 460 mm. Twinned wheels shall be considered as one wheel.

3.17 Battery Operated Vehicle (Two Wheeler) — A vehicle adapted for use upon roads and powered exclusively by an electric motor whose traction energy is supplied exclusively by traction battery installed in the vehicle.

Provided that a two wheeled battery operated vehicle shall not be deemed to be a motor vehicle if all the following conditions are verified and authorized by any testing agency specified in *Central Motor Vehicle Rule* 126, namely:

a) Vehicle is equipped with an electric motor having thirty minute power less than 0.25 kW;

b) Maximum speed of the vehicle is less than 25 krn/h;

c) Vehicle is fitted with suitable brakes and retro-reflective devices, that is one white reflector in the front and one red reflector at the rear;

d) Unladen weight (excluding battery weight) of the vehicle is not more than 60 kg; and

e) In case of pedal assisted vehicle equipped with an auxiliary electric motor, in addition to above, the thirty minute power of the motor is less than 0.25 kW, whose output is progressively reduced and finally cut off as the vehicle reaches a speed of 25 km/h, or sooner, if the cyclist stops pedaling.

3.18 E-rickshaw — A special purpose battery operated vehicle having three wheels and intended to provide last mile connectivity for transport of passengers for hire or reward, provided:

a) Such vehicle is constructed or adapted to carry not more than four passengers, excluding the driver, and not more than forty kilograms luggage in total;

b) Net power of its motor is not more than 2 000 W; and

c) Maximum speed of the vehicle is not more than 25km/h.

3.19 E-cart — A special purpose battery operated vehicle having three wheels and intended to provide last mile connectivity for carrying goods for hire or reward, provided:

a) Such vehicles is constructed or adapted for carrying goods by providing a separate load body or compartment with the maximum weight three hundred and ten kilograms in addition to driver;

b) Net power of its motor is not more than 2 000 W; and

c) Maximum speed of the vehicle is not more than 25 km/h.

3.20 Combine Harvester — Means an agricultural equipment vehicle, self-propelled or agricultural tractor powered type (either coupled to the trailer for header assembly or any other attachment of the machine) designed to perform more than one of the following tasks namely:

a)

1) Picking,
2) Harvesting ,
3) Felling,
4) Threshing,
5) Separating,
6) Cleaning,
7) Debarking,
8) Chopping,
9) Billeting,
10) Collecting, and
11) Unloading crop, agricultural product such as agro - forestry product including but not limited to grain, sugarcane, cotton, fodder, straw or stalk, pulp wood, root and tuber crops like potato, onion, carrots while moving through the standing crop or agricultural produce.

and / or

b) Arrangement of bagging with a pick-up attachment to use it for handling crop that has been swathed.

NOTE — Mounted / Semi-mounted / Trailed attachments are excluded from this definition.

3.21 Modular Hydraulic Trailer — A trailer module intended for carrying indivisible heavy or over-dimensional cargo and having the following features namely:

a) Swing axles with hydraulic suspension;
b) Independently steerable axles;
c) Two or more axle rows;
d) Suitable arrangement for joining such modules; longitudinally or laterally or both;
e) Suitable provision for joining such separate modules with spacer beam arrangement or by bolster arrangement or by grinder bridge arrangement or by loading deck arrangement;
f) Suitable drawbar arrangement for being pulled or pushed or self-propelled; and
g) Fitted with suitable braking system.

3.22 Puller Tractor — A multiaxle haulage tractor of category N3 vehicle having:

a) Suitable arrangement to pull or push modular hydraulic trailer or combination thereof under drawbar arrangement;
b) Adequate ballast weight for providing traction;
c) Minimum engine power of 260 hp and;
d) Maximum speed not exceeding twenty five km/h while pulling load.

3.23 Power Tiller — Agricultural machinery used for soil preparation having a single axle in which the direction of travel and its control for field operation is performed by the operator walking behind it. This equipment may or may not have a riding attachment and when coupled to a trailer can be used for the transportation of goods. The maximum speed of the power tiller when coupled to a trailer shall not exceed 22 km/h. The maximum haulage capacity of the power tiller coupled to a trailer shall not exceed 1.5 tonne.

3.24 Agricultural Trailer — A trailer generally left uncovered with single/ double axle construction which is coupled to an agricultural tractor by means of tow hooks and predominantly used for transporting agricultural materials.

3.25 Axle — The common axis of rotation of two or more wheels whether power driven or freely rotating, and whether in one or more segments located in the same plane perpendicular to the longitudinal centre-line of the vehicle, which transmits the load of the vehicle to the road through these wheels.

3.26 Group of Axle — An assemblage of two or more consecutive axles considered together in determining their combined load effect on a pavement structure.

3.27 Solo Axle — An axle that cannot be considered as part of a group of axles.

3.28 Tandem Axle — A group of two axles. Weight limits for tandem axle are as per requirements in *Central Motor Vehicle Rules,* 1989.

3.29 Tridem Axle — A group of three axles.

3.30 Airport Passenger Bus (Tarmac Bus) — A bus having doors on both sides which is exclusively used for the carrying the passengers from airport terminal to and from the aircraft and plying on the air side on the airport- terminal with maximum speed not exceeding thirty kilometer per hour.

3.31 Double Deck Vehicle — A vehicle where the provided spaces for passengers are arranged, at least in one part, in two superimposed levels and spaces for standing passengers are not provided in the upper deck.

3.32 Double Deck Articulated Vehicle — A vehicle which consists of two or more rigid sections which articulate relative to one another; the passenger compartments of each section intercommunicate on at least one deck so that passengers can move freely between them; the rigid sections are permanently connected so that they can only be separated by an operation involving facilities which are normally only found in a workshop.

3.33 A Tipper — N-category vehicle intended for carrying loose unpackaged material and provided with powered equipment for inclining the payload carrying area to deposit the payload on the ground.'

(TED 06)

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