UDC 629·113·071·5 : 001·4

(Reaffirmed 1995)

Indian Standard

DENOMINATIONS AND DEFINITIONS OF WEIGHTS OF ROAD VEHICLES

[Ref: Doc : EDC 38 (2321)]
Automotive Vehicles Sectional Committee, EDC 38

1. Scope — Presents denominations and definitions of vehicle weights, complete or not, considered under defined conditions and is applicable to commonly used road vehicles.

1.1 This standard does not apply to:

a) specially designed vehicles for use other than the carrying of passengers or goods, and

b) two wheelers and three wheelers.

2. General

2.1 By *'weight'* or *'load'* is meant the force transmitted by the vehicle, or by the part of the vehicle defined, to a horizontal plane of contact, under static conditions. Weights and loads are measured with the vehicle stationary; the vehicle and its road wheels being in the straight-ahead position.

2.2 The definitions apply to vehicles newly manufactured and with normal equipment. For terms defined in **3.7** to **3.12** inclusive, both the maximum weight set by the manufacturer and maximum weight authorized are defined for each case.

2.3 The definitions given do not necessarily apply to special vehicles, for which other definitions are sometimes necessary.

2.4 For some terms, the elements shown with the reference mark (*) in the lists for their definitions need not be included, while others, not included, may be added.

Example : Fifth wheel, auxiliary anti-skid devices.

2.4.1 In both cases, the manufacturer when specifying the vehicle weight corresponding to a given term shall indicate ' IS : 9211 Term ... ', and list afterwards any elements not delivered or added. If the weight of the driver is included, this fact shall be stated.

3. Denominations and Definitions

3.1 *Bare Chassis Dry Weight* — Weight of the bare chassis which is a mechanical whole including only the parts strictly necessary for the operation intended by the manufacturer.

3.1.1 As far as motor vehicles are concerned, the foregoing implies that, if fuel and coolant liquid are supplied, the vehicle will be ready for normal operation.

3.1.2 The following parts are considered strictly necessary:

a) Complete electrical equipment excluding lighting and signalling (optical and acoustic) devices,

b) Wet charged battery,

c) Instrument panel,

d) Lubricants, and

e) Fluids for brakes and for all hydraulic circuits.

Adopted 23 July 1979

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3.1.3 The following parts or elements may be optionally fitted, according to the manufacturer's specification:

a) Engine bonnet;
b) Engine cover;
c) Wheel boxes;
d) Trailer coupling device;
e) Supplementary gear-box;
f) Power take-off;
g) Retarding device not on the engine;
h) Coolant fluid in the case of sealed coolant circuit;
k) Spare wheel(s);
m) Mechanical and/or hydraulic lifting devices; and
n) Parts required by legislation concerning road traffic, for example, lighting and signalling devices, horns, etc.

3.1.4 Optional parts or elements listed in **3.1.3** and fitted on the dry bare chassis must be indicated.

3.2 *Bare Chassis Kerb Weight* — Bare chassis dry weight as defined in **3.1** plus the following elements:

a) Coolant,
b) Fuel (tank filled to at least 90 percent of the capacity specified by the manufacturer),
c) Spare wheel(s)*,
d) Fire extinguisher(s)*,
e) Standard spare parts*,
f) Chocks*, and
g) Standard tool kit*.

3.3 *Chassis and Cab Dry Weight* — Bare chassis dry weight as defined in **3.1** plus the weight of the complete cab equipped for normal operation plus the weight of the following element:

a) Bunks*.

3.4 *Chassis and Cab Kerb Weight* — Chassis and cab dry weight as defined in **3.3** plus the weight of the following elements:

a) Coolant,
b) Fuel (tank filled to at least 90 percent of the capacity specified by the manufacturer),
c) Spare wheel(s)*,
d) Fire extinguisher(s)*,
e) Standard spare parts*,
f) Chocks*, and
g) Standard tool kit*.

3.5 *Complete Vehicle Dry Weight* — Weight of vehicle with body, fitted with all electrical equipment and auxiliary equipment necessary for normal operation of the vehicle.

3.5.1 *Dry weight of complete vehicle with separate chassis and cab* — Chassis and cab dry weight as defined in **3.3** plus the weight of any standard equipment forming part of the body, plus the weight of the following elements:

a) Fixed or removable hinged sides*,
b) Tarpaulin and loops*,
c) Tail board*,
d) Mechanical and/or hydraulic lifting device complete with liquids and tipper body*,
e) Coupling device (fifth wheel)*, and
f) Fixed operating equipment*.

3.5.2 *Dry weight of complete vehicle with integral chassis and cab* — Weight of the vehicle equipped as specified in **3.5.1.**

3.5.3 *Dry weight of complete vehicle without chassis with integral body* — Weight of the vehicle equipped as specified in **3.5.1.**

3.6 *Complete Vehicle Kerb Weight* — Complete vehicle dry weight as defined in **3.5** plus the weight of the following elements:

a) Coolant,
b) Fuel (tank filled to at least 90 percent of the capacity specified by the manufacturer),
c) Spare wheel(s)*,
d) Fire extinguisher(s)*,
e) Standard spare parts*,
f) Chocks*, and
g) Standard tool kit*.

3.7 *Maximum Total Weight*

3.7.1 *Maximum manufacturer's total weight* — Weight calculated by the manufacturer for specific operating conditions, taking into account such elements as strength of materials, tyre loading capacity, etc.

3.7.2 *Maximum authorized total weight* — Weight calculated by the administrative authority for operating conditions laid down by them.

Note — For tractor vehicles coupled with a trailer or a semi-trailer which exerts a significant vertical force onto the fifth wheel or the coupling device, this force shall be included in the maximum manufacturers total weight **(3.7.1)** or maximum authorized total weight **(3.7.2).**

3.8 *Maximum Payload*

3.8.1 *Maximum manufacturer's payload* — Load obtained by subtracting the weight defined in **3.6** from the weight defined in **3.7.1,**

3.8.2 *Maximum authorized payload* — Load obtained by subtracting the weight defined in **3.6** from the weight defined in **3.7.2.**

Note — For tractor vehicles coupled with a trailer or a semi-trailer which exerts a significant vertical force on the fifth wheel or the coupling device, this force shall be included in the maximum manufacturer's payload **(3.8.1)** or maximum authorized payload **(3.8.2).**

3.9 *Maximum Axle Weight*

3.9.1 *Maximum manufacturer's axle weight* — Weight calculated by the manufacturer taking into account the strength of materials, the tyre loading capacity, etc.

3.9.2 *Maximum authorized axle weight* — Weight calculated by the administrative authority taking into account, in particular, the strength of roads and road constructions.

3.10 *Towed Weight* — Maximum weight of trailers and/or semi-trailers capable of being towed by a tractor.

3.10.1 *Manufacturer's towed weight* — Towed weight calculated by the manufacturer from the characteristics of the tractor vehicle.

3.10.2 *Authorized towed weight* — Towed weight determined by the administrative authority taking into account the characteristics of the tractor vehicle and the traffic-conditions.

3.11 *Maximum Weight of a Road Train*† — Sum of the maximum total weights of the tractor vehicle and of the trailer(s).

3.11.1 *Maximum manufacturer's weight of a road. train* — Sum of the weights defined by **3.7.1** corresponding to the tractor and trailer(s).

†Tractor vehicle coupled with trailers which exert only a negligible vertical force on the coupling hook.

3.11.2 *Maximum authorized weight of a road train* — Sum of the weights defined by **3.7.2** corresponding to the tractor and trailer(s), unless the administrative authority fixes a lower limit.

3.12 *Maximum Weight of an Articulated Vehicle*†

3.12.1 *Maximum manufacturer's weight of an articulated vehicle* — Sum of the weights defined in **3.7.1** for the tractor vehicle and **3.9.1** for the towed vehicle.

3.12.2 *Maximum authorized weight of an articulated vehicle* — Sum of the weights defined in **3.7.2** for tractor vehicle and **3.9.2** for the towed vehicle, unless the administrative authority fixes a lower limit.

3.13 *Vertical Load or Weight Borne by a Tractor for the Semi-Trailer* (*See* Fig. 1)

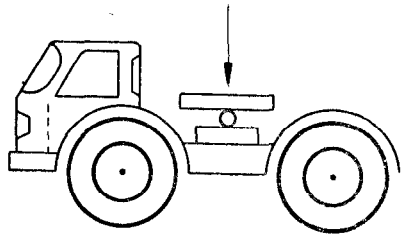

FIG. 1 VERTICAL LOAD BORNE BY A TRACTOR

3.14 *Vertical Load or Weight Exerted by the Semi-Trailer on the Tractor* (*See* Fig. 2)

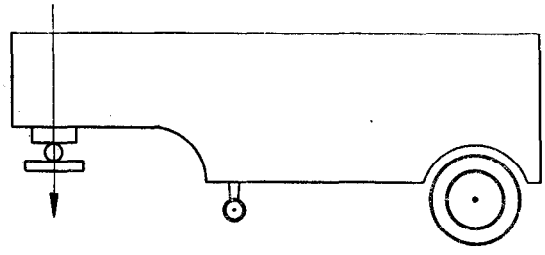

FIG. 2 VERTICAL LOAD EXERTED BY SEMI-TRAILER ON TRACTOR

3.15 *Power/Weight Ratio* — The ratio of net power determined by Indian Standard Methods of tests for internal combustion engines: Part IV Declaration of power, efficiency, fuel consumption and lubricating oil consumption to the maximum weight set by manufacturer.

EXPLANATORY NOTE

The definitions should make possible a useful comparison of weights applying to similar conditions. These definitions have been drafted taking into account their interest for the administration, the manufacturers and the users.

This standard does not intend to indicate measurement methods nor to determine the units to be used to express the results, as long as the units used belong to the SI system. Neither precision to be obtained nor order of magnitude of the weights defined is indicated.

This Indian Standard is in conformity with International Standard ISO 1176-1974 Road vehicles — weights — vocabulary, issued by the International Organization for Standardization.

†Tractor with semi-trailer exerting an appreciable vertical force on the coupling device.

Printed at New India Printing Press, Khurja, India