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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

**ISO RECOMMENDATION
R 1176**

VEHICLE WEIGHTS

DENOMINATIONS AND DEFINITIONS

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 1176, *Vehicle weights – Denominations and definitions*, was drawn up by Technical Committee ISO/TC 22, *Automobiles*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question led to the adoption of a Draft ISO Recommendation.

In October 1968, this Draft ISO Recommendation (No. 1725) was circulated to all the ISO Member Bodies for enquiry. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Belgium	Italy	Sweden
Chile	Japan	Switzerland
Czechoslovakia	Korea, Rep. of	Thailand
France	Netherlands	Turkey
Germany	New Zealand	U.A.R.
Greece	Portugal	United Kingdom
Hungary	Romania	U.S.S.R.
Israel	Spain	

No Member Body opposed the approval of the Draft.

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in January 1970, to accept it as an ISO RECOMMENDATION.

VEHICLE WEIGHTS

DENOMINATIONS AND DEFINITIONS

1. SCOPE

This ISO Recommendation presents denominations and definitions of vehicle weights, complete or not, considered in definite conditions.

The list of terms to be defined (denominations) precedes the definitions proper.

The definitions established should make possible a useful comparison of weights applying to similar conditions; they have been drafted taking into account their interest for the administration, the manufacturers and the users, especially from term 4.7 onwards.

This ISO Recommendation should be regarded as a study on terminology. In particular, it 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 metric system. Neither precision to be obtained nor order of magnitude of the weights defined is indicated.

2. FIELD OF APPLICATION

The contents of this ISO Recommendation apply to commonly used motor vehicles and to their trailers. They do not apply to

- specially designed vehicles, for uses other than the carrying of passengers or goods;
- motor-cycles.

3. GENERAL

- 3.1 By "weight" or "load" is meant the force transmitted by the vehicle, or by the part of the vehicle to be 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 are in the straight-ahead position.

- 3.2 Weight definitions apply to vehicles newly manufactured and with normal equipment. From term 4.7 to term 4.12 inclusive, both maximum weight set by the manufacturer and maximum weight authorized are defined for each case.

- 3.3 The definitions given do not necessarily apply to special vehicles, for which other definitions may sometimes be necessary.

- 3.4 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.

Examples : fifth wheel, auxiliary anti-skid devices.

In both cases, the manufacturer when specifying the vehicle weight corresponding to a given term should indicate "ISO Recommendation R 1176, term . . .", and list afterwards all the elements not delivered or added, if any.

If the weight of the driver is included, this fact should be stated.

4. DENOMINATIONS AND DEFINITIONS

The following terms are defined :

- Bare chassis dry weight (Term 4.1)
- Bare chassis kerb weight (Term 4.2)
- Chassis and cab dry weight (Term 4.3)
- Chassis and cab kerb weight (Term 4.4)
- Complete vehicle dry weight (Term 4.5)
 - (a) Vehicle with separate chassis and cab (Term 4.5.1)
 - (b) Vehicle with integral chassis and cab (Term 4.5.2)
 - (c) Vehicle without chassis with integral body (Term 4.5.3)
- Complete vehicle kerb weight (Term 4.6)
- Maximum total weight (Term 4.7)
 - (a) Maximum total weight set by the manufacturer (Term 4.7.1)
 - (b) Maximum total weight authorized (Term 4.7.2)
- Maximum payload (Term 4.8)
 - (a) Maximum manufacturer's payload (Term 4.8.1)
 - (b) Maximum authorized payload (Term 4.8.2)
- Maximum axle weight (Term 4.9)
 - (a) Maximum manufacturer's axle weight (Term 4.9.1)
 - (b) Maximum authorized axle weight (Term 4.9.2)
- Towed weight (Term 4.10)
 - (a) Manufacturer's towed weight (Term 4.10.1)
 - (b) Authorized towed weight (Term 4.10.2)
- Maximum weight of a road train (Term 4.11)
 - (a) Maximum manufacturer's weight of a road train (Term 4.11.1)
 - (b) Maximum authorized weight of a road train (Term 4.11.2)
- Maximum weight of an articulated vehicle (Term 4.12)
 - (a) Maximum manufacturer's weight of an articulated vehicle (Term 4.12.1)
 - (b) Maximum authorized weight of an articulated vehicle (Term 4.12.2)
- Vertical load or weight borne by a tractor for a semi-trailer (Term 4.13)
- Vertical load or weight exerted by the semi-trailer on the tractor (Term 4.14)
- Power/weight ratio (Term 4.15)

- 4.1 Bare chassis dry weight.** The bare chassis is a mechanical whole including only the parts strictly necessary for the operation intended by the manufacturer.

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.

It is understood that the following parts are considered strictly necessary : complete electrical equipment excluding lighting and signalling (optical and acoustic) devices, wet charged battery, instrument panel, lubricants, fluids for brakes and for all hydraulic circuits.

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

- engine bonnet, engine cover, wheel boxes, trailer coupling device, supplementary gear-box, power take-off, retarding device not on the engine, coolant fluid in the case of sealed coolant circuit, spare wheel(s), mechanical and/or hydraulic lifting devices;
- parts required by legislation concerning road traffic, for example : lighting and signalling devices, horns.

Optional parts or elements listed above and fitted on the dry bare chassis must be indicated.

- 4.2 Bare chassis kerb weight.** Bare chassis dry weight (Term 4.1) plus the following elements :

- coolant
- fuel (full)
- spare wheel(s) (*)
- fire extinguisher(s) (*)
- standard spare parts (*)
- chocks (*)
- standard tool kit (*)

- 4.3 Chassis and cab dry weight.** Bare chassis dry weight (Term 4.1) plus complete cab equipped for normal operation, plus the following element :

- bunks (*)

- 4.4 Chassis and cab kerb weight.** Chassis and cab dry weight (Term 4.3) plus the following elements :

- coolant
- fuel (full)
- spare wheel(s) (*)
- fire extinguisher(s) (*)
- standard spare parts (*)
- chocks (*)
- standard tool kit (*)

4.5 Complete vehicle dry weight. Weight of vehicle with body, fitted with all electrical equipment and auxiliary equipment necessary for normal operation of the vehicle.

4.5.1 Vehicle with separate chassis and cab. Term 4.3 plus any standard equipment forming part of the body, together with the following elements :

- fixed or removable hinged sides (*)
- tarpaulin and loops (*)
- tail board (*)
- mechanical and/or hydraulic lifting device complete with liquids and lifter (*)
- coupling device (fifth wheel) (*)
- any fixed operating equipment (*)

4.5.2 Vehicle with integral chassis and cab. The vehicle must be equipped as indicated for definition 4.5.1.

4.5.3 Vehicle without chassis with integral body. The vehicle must be equipped as indicated for definition 4.5.1.

4.6 Complete vehicle kerb weight. Complete vehicle dry weight (Term 4.5) plus the following elements :

- coolant
- fuel (full)
- spare wheel(s) (*)
- fire extinguisher(s) (*)
- standard spare parts (*)
- chocks (*)
- standard tool kit (*)

4.7 Maximum total weight

4.7.1 Maximum total weight set by the manufacturer. The weight calculated by the manufacturer for specific operating conditions, taking into account such elements as strength of materials, tyre loading capacity, etc.

4.7.2 Maximum total weight authorized. The weight calculated by the administrative authority for operating conditions laid down by them.

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 should be included in the maximum total weight (see Fig. 1 and 2).

4.8 Maximum payload

4.8.1 Maximum manufacturer's payload. Load obtained by subtracting the weight defined under Term 4.6 from the weight defined under Term 4.7.1.

4.8.2 Maximum authorized payload. Load obtained by subtracting the weight defined under Term 4.6 from the weight defined under Term 4.7.2.

For tractor vehicles (tractor with semi-trailer, lorries with trailers which exert a significant vertical force onto the coupling device), the payload will include the force exerted onto the fifth wheel or the coupling device by the semi-trailer or trailer (see Fig. 1 and 2).