INTERNATIONAL STANDARD

ISO

2416

Third edition
1992-05-01

Passenger cars — Mass distribution

Voitures particulières — Répartition des masses

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 2416 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Sub-Committee SC 6, *Terms and definitions of dimensions and masses.*

This third edition cancels and replaces the second edition (ISO 2416:1976), of which it constitutes a technical revision.

Passenger cars — Mass distribution

1 Scope

This International Standard defines the distribution of the transportable mass for passenger cars, and specifies

— a conventional average mass for passengers, and

— a conventional mass for luggage.

The total of the masses thus defined represents nominal design pay mass for a given vehicle.

This International Standard applies to passenger cars as defined in ISO 3833.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3832:1991, Passenger cars — Luggage compartments — Method of measuring reference volume.

ISO 3833:1977, Road vehicles — Types — Terms and definitions.

ISO 6549:1980, Road vehicles — Procedure for H-point determination.

3 Terms and conventional values

3.1 Conventional mass of passenger, m_p

The conventional mass of a passenger without luggage is fixed at $m_p = 68$ kg.

3.2 Conventional mass of luggage, m_b

The conventional mass of luggage, for each passenger, is fixed at $m_b = 7$ kg.

3.3 Nominal design pay mass, m_t

The nominal design pay mass, m_t, shall meet the following inequality:

$$m_t \geqslant (m_p + m_b) \times n$$

where n is the number of seating places as defined by the manufacturer.

3.4 Nominal mass of transportable goods, m_{tr}

The nominal mass of transportable goods, m_{tr}, is determined by the following formula:

$$m_{tr} = m_t - m_p \times n_o$$

where

n_o is the number of occupied seats;

m_t is as defined in 3.3;

m_p is as defined in 3.1.

4 Mass distribution

4.1 General requirements

None of the permissible axle loads shall be exceeded.

4.2 Passenger cars with invariable volume of luggage compartment

4.2.1 Passengers

The centre of respective masses is situated, in accordance with ISO 6549, as specified in either a) or b):

a) **non-adjustable seats:** vertically through a point located at 50 mm in front of the point R of the corresponding seat;

b) **adjustable seats:** vertically through a point located at 100 mm in front of the point R of the corresponding seat or at the nearest locked position.

4.2.2 Luggage

The centre of the conventional luggage mass is situated on a vertical passing through the middle of the projection on a horizontal plane of the maximum usable length of the luggage compartment situated in the median longitudinal plane of the vehicle. See figure 1.

## 4.3 Passenger cars with variable volume of luggage compartment

In the case of passenger cars with foldable rear seats which increases the capacity of the luggage compartment, the centre of the transportable masses is situated as in 4.3.1 and 4.3.2.

4.3.1 Passengers

The centre of the masses of passengers is located in accordance with 4.2.1.

4.3.2 Transportable goods

Location of the centres of masses of transportable goods both with folded and with unfolded rear seats is defined by the manufacturer.
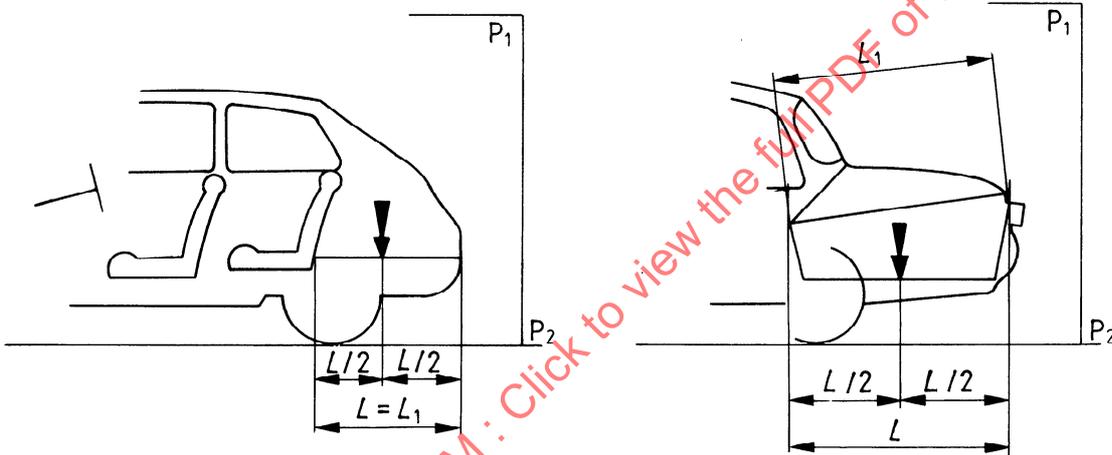
Key

P_1 = the median longitudinal plane of the vehicle

P_2 = the horizontal plane of projection

L_1 = the maximum usable length of the luggage compartment (this compartment is limited to the reference volume as defined in ISO 3832)

L = the length of the horizontal projection of L_1

Figure 1

This page intentionally left blank

This page intentionally left blank