INTERNATIONAL STANDARD

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Two-wheeled motorcycles — Parking stability of side- and centre-stands

Motocycles à deux roues — Stabilité de stationnement offerte par les béquilles latérales et centrales

Reference number
ISO 9565:1990(E)

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.

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Two-wheeled motorcycles — Parking stability of side- and centre-stands

1 Scope

This International Standard specifies test methods for determining the parking stability of two-wheeled motorcycles when parked on a side-stand or a centre-stand.

2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was 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 edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 6726:1988, *Mopeds and motorcycles with two wheels — Masses — Vocabulary*.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

3.1 side-stand: Retractable device which supports a stationary two-wheeled motorcycle by leaving both tyres in contact with the parking surface and providing a third contact area with the parking surface on only one side of the vehicle longitudinal plane.

3.2 centre-stand: Retractable device which supports a stationary two-wheeled motorcycle by providing two or more contact areas between the stand and parking surface, with at least one contact area on each side of the vehicle longitudinal plane. The centre-stand may support the motorcycle entirely or in conjunction with one or both tyres.

3.3 parking surface: Rigid flat plane which supports the motorcycle through contact with the side- or centre-stand and possibly one or both tyres. (See 4.1.5.)

3.4 stand contact area: Area of contact between a stand and a horizontal parking surface, with the stand supporting the motorcycle and penetrating the surface to a depth of 5 mm ± 0,5 mm.

3.5 specific pressure: Normal force exerted on the parking surface per unit of stand area, by the stand when it is supporting the motorcycle.

3.6 tip-over angle: Angle at which the motorcycle, parked on the parking surface, starts to tip over when rotating the parking surface about an axis parallel to the x-axis.

3.7 roll-off angle: Smallest angle of rotation at which the side-stand or centre-stand retracts unassisted and no longer supports the motorcycle in a stationary position, when rotating the parking surface, with the motorcycle parked on it, about the y-axis.

NOTE 1 Reference to axes are based on a vehicle right-hand orthogonal axis system such that when the motorcycle is moving in a straight line on a level surface, the x-axis is horizontal, points forwards, and is parallel to the vehicle longitudinal plane. The y-axis points to the rider's left side and the z-axis points upwards. The motorcycle axis system has its origin in the vehicle centre of gravity.

4 Test procedures

4.1 Tip-over and roll-off angle determinations

4.1.1 The motorcycle shall be at kerb mass (see the definition for vehicle kerb mass in ISO 6726) and the suspensions shall be set, if adjustable, according to the instructions of the manufacturer.

4.1.2 The tyres shall be inflated to the motorcycle manufacturer's maximum recommended inflation pressure, staying within the limits specified by the tyre manufacturer.

4.1.3 The transmission shall be in neutral. If there is a parking brake on the vehicle or if the transmission has a parking position, these devices shall be engaged.

4.1.4 The steering head, if equipped with a lock, shall be locked, and tests shall be performed with the steering head in all available locked positions. If the steering head is not equipped with a lock, tests shall be performed with the steering head fixed at its maximum rotation to both left and right.

4.1.5 The parking surface shall be a rigid flat platform capable of being tilted parallel to the x- and y-axes. The surface shall provide sufficient friction to prevent test motorcycles from sliding before reaching tip-over and roll-off angle limits. The tilt angle shall be measured with a device accurate to the nearest 0,5°.

4.1.6 Park the motorcycle on the platform by separate use of both centre-stand and side-stand. Tilt the platform parallel to the x-axis to the right and to the left from its horizontal plane using each stand separately, thus determining the tip-over angles of the motorcycle, to both sides and for both types of support stand respectively.

4.1.7 Park the motorcycle on the platform by separate use of both side-stand and centre-stand. Tilt the platform parallel to the y-axis forward from its horizontal plane using each stand in turn, thus determining the roll-off angles of the motorcycle forwards, for both types of support stand.

4.1.8 Carry out three measurements for each configuration in 4.1.6 and 4.1.7 (a total of three times six different losses of stability). Record the angle at which stability is lost to the nearest 0,5°. When three measurements have been obtained within a range of 1°, the average of these three measurements, to the nearest 0,5°, is considered to be the loss of stability angle.

4.2 Specific pressure

4.2.1 Force measurement

Determine the force, expressed in newtons, applied through each stand contact area by installing an appropriate force-measurement device in a horizontal parking surface, and placing the individual stand contact area(s) on the device with the stand supporting the motorcycle. The device shall be of sufficient size to support the entire stand contact area being evaluated and shall measure the force with an accuracy of ± 2,5 N.

4.2.2 Stand contact area

Determine the area of contact, expressed in square centimetres, (see figure 1) between each stand and the parking surface by making an imprint of the stand contact in an inelastic solid material (e.g. modelling clay). The imprint is achieved by placing a layer of the inelastic material with a thickness of 5 mm ± 0,5 mm on the parking surface, and positioning the stand on this material while it is supporting the motorcycle.

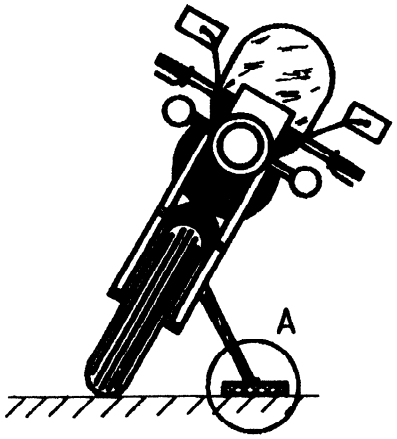
If necessary the stand may be pushed into the inelastic material so as to penetrate as deeply as defined in 3.4 (see figure 1).

The measured area, within a tolerance of 10 %, of the resulting stand imprint at the upper surface of the inelastic material shall be the stand contact area.

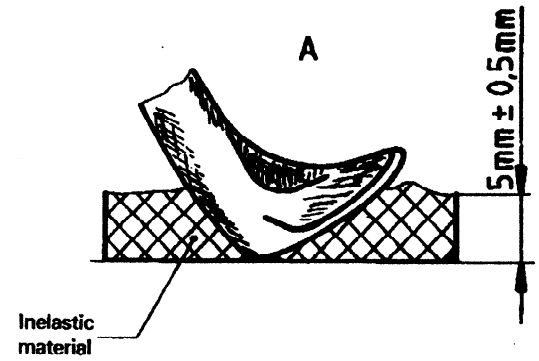
Any traces left by the retracting device of the side-stand shall not be taken into consideration when defining the side-stand contact area.

4.2.3 Pressure calculation

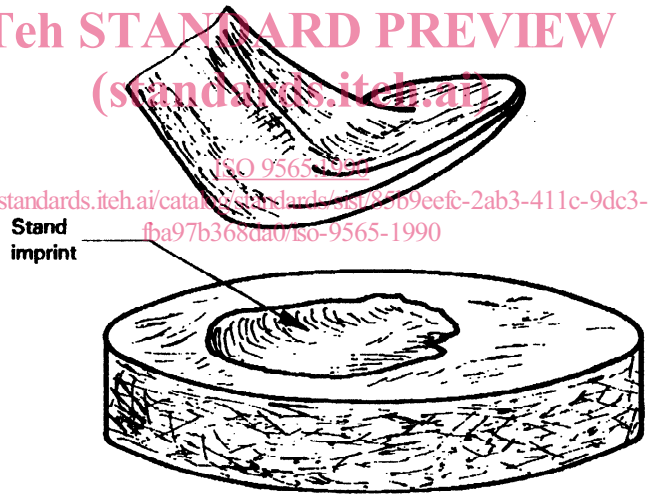
Calculate the specific pressure, expressed in newtons per square centimetre, for each stand contact as the measured applied force from 4.2.1 divided by the measured contact area from 4.2.2.



a) Motorcycle on side-stand



b) Side-stand penetrating inelastic material (enlargement)



c) Side-stand imprint

Figure 1 — Measurement of side-stand contact area

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