



INTERNATIONAL STANDARD ISO 8709:1995

TECHNICAL CORRIGENDUM 1

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Mopeds — Brakes and braking devices — Tests and measurement methods

TECHNICAL CORRIGENDUM 1

Cyclomoteurs — Freins et dispositifs de freinage — Méthodes d'essai et de mesure

RECTIFICATIF TECHNIQUE 1 **iTeh STANDARD PREVIEW**
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Technical Corrigendum 1 to International Standard ISO 8709:1995 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 23, *Mopeds*.

Page 1

1.1

Add the following to the last paragraph, after “UN-ECE Regulation No. 78”:

“(01 series of amendments)”

ICS 43.140

Ref. No. ISO 8709:1995/Cor.1:1998(E)

Descriptors: road vehicles, motorcycles, mopeds, braking systems, brakes, specifications, tests, braking tests, static tests, dynamic tests, test result sheets.

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1.3

Delete the following from the second list item:

“heat fade tests;”

Pages 3 and 4

Table 1

Replace the heading "Measurand" with "To measure".

In the wet brake test, delete the optional measured quantities "Deceleration" and "Deceleration throughout braking stop" and the corresponding instrument examples.

Delete the heat fade test and the corresponding obligatory and optional measured quantities and instrument examples.

Page 5

Figure 1

Replace “To water tank” with “From water tank”.

Page 6

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6.2

Delete “and heat fade tests” from the first sentence.

6.4

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Delete the last sentence.

6.6.2

In the first sentence, add “ v ,” after “test speed, ” and “ a ,” after “mean fully developed deceleration”

In the second indent after the formula, replace “acceleration” with “deceleration”.

Page 7

8.2.3

Delete “, as specified in 7.1”.

Page 8

8.3

Replace “moped speed/vehicle loading condition” with “moped speed/loading condition”.

9.2.2

In list item d), correct the text to read “at which the test is to be carried out”.

Page 12

A.8

Replace "Vehicle condition" with "Moped condition".

Replace the existing table with the following:

Stop No.	Test speed		Measured performance			Control force N	Remarks
	v_p km/h	v km/h	a m/s ²	L m	L_c m		

v_p is the prescribed test speed
 v is the recorded test speed
 a is the mean fully developed deceleration
 L is the recorded stopping distance
 L_c is the corrected stopping distance

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A.9.1

Replace "Vehicle condition" with "Moped condition".

Page 13

A.9.1

Replace the existing table with the following:

Condition	Stop No.	Test speed		Measured performance			Maximum deceleration	Control force	Remarks
		v_p km/h	v km/h	a m/s ²	L m	L_c m			
Dry brake									Test at 2,5 m/s ²
Wet brake									Test at same control force as above

v_p is the prescribed test speed
 v is the recorded test speed
 a is the average deceleration between 0,5 s and 1 s after control application
 L is the recorded stopping distance
 L_c is the corrected stopping distance
 a_{max} is the maximum deceleration recorded over the whole stop

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A.10

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Replace "Vehicle condition" with "Moped condition".
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**Mopeds — Brakes and braking devices —
Tests and measurement methods**

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*Cyclomoteurs — Freins et dispositifs de freinage — Méthodes d'essai
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Reference number
ISO 8709:1995(E)

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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 8709 was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 23, *Mopeds*.

Annex A forms an integral part of this International Standard.

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Mopeds — Brakes and braking devices — Tests and measurement methods

1 Scope

1.1 This International Standard specifies tests and measurement methods for brakes and braking of mopeds with two or three wheels, as defined in ISO 3833, which are intended for use on public roads, in order to establish uniform worldwide test procedures for braking systems.

Further complementary tests which assist in the assessment and development of braking systems are also included.

Reference is made to "L-category" vehicles. UN-ECE Regulation No. 78 defines a two-wheeled moped (L₁) and a three-wheeled moped (L₂).¹⁾

The values in square brackets [] are taken from UN-ECE Regulation No. 78.

1.2 This International Standard does not cover mopeds which are

- controlled by a pedestrian
- designed for the special use of handicapped persons.

1.3 This International Standard sets out the following types of tests:

- static tests;

- dynamic tests:

basic tests,

wet brake tests,

heat fade tests;

- parking brake tests (where applicable).

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 3779:1983, *Road vehicles — Vehicle identification number (VIN) — Content and structure.*

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

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

1) Definitions from UN-ECE Regulation No. 78:

Category L₁: Two-wheeled vehicles with an engine cylinder capacity not exceeding 50 cc and a maximum design speed not exceeding 50 km/h.

Category L₂: Three-wheeled vehicles with an engine cylinder capacity not exceeding 50 cc and a maximum design speed not exceeding 50 km/h.

ISO 7116:1995, *Mopeds — Measurement of maximum speed*.

ISO 9132:1990, *Three-wheeled mopeds and motorcycles — Masses — Vocabulary*.

3 Definitions

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

3.1 Braking system and components

3.1.1 braking system: Combination of parts (other than the engine) the function of which is progressively to reduce the speed of a moving moped, bring it to a halt and keep it stationary if it is already halted, consisting of

- the control,
- the transmission(s),
- the brake(s).

3.1.2 control: Part operated directly by the rider to supply to the transmission the energy required for braking or controlling the moped.

3.1.3 transmission: Combination of components which provide the functional link between the control and brake.

3.1.4 brake: Parts of the braking system in which the forces opposing the movement of the moped are developed.

3.2 Types of braking systems

3.2.1 independent braking system

(1) [in the case of two-wheeled mopeds (L_1):] System which acts on only one wheel.

(2) [in the case of three-wheeled mopeds (L_2):] System which acts on one or two wheels.

3.2.2 combined braking system

(1) [in the case of two-wheeled mopeds (L_1):] System whereby at least two brakes on different wheels are actuated by the operation of a single control.

(2) [in the case of three-wheeled mopeds (L_2):] System which operates on all the wheels.

3.3 Moped loading

3.3.1 laden moped: Moped laden so as to reach its manufacturer's maximum total mass as defined in ISO 6726 or ISO 9132, including the mass of the rider and the equipment or instrumentation as described in 5.3, with the mass distribution(s) on the axles as stated by the moped manufacturer.

3.3.2 unladen moped: Moped in the condition vehicle kerb mass as defined in ISO 6726 or in the condition bare chassis mass in working order as defined in ISO 9132, to which are added the mass of the rider, the equipment and instrumentation as described in 5.3.

3.4 maximum speed: Speed which the moped can attain when tested in accordance with ISO 7116.

3.5 Test parameters

3.5.1 test speed, v : Moped speed measured at the moment that the rider begins to actuate the braking system control(s).

3.5.2 mean fully developed deceleration, a : Average deceleration measured (or calculated) from the moment that the brake force is fully developed until the moment that the moped comes to a stop.

3.5.3 stopping distance, L : Distance covered by the moped, measured from the moment that the rider begins to actuate the braking system control until the moment that the moped comes to a stop.

4 Test site conditions

4.1 Test surface

The test surface shall be dry, substantially level (i.e. it shall not have a gradient in excess of 1 %) and shall be free from extraneous materials. The surface shall afford good adhesion (for example: dry asphalt or a surface with a coefficient of friction which exceeds 0,75).

NOTE 1 The parking brake hill-holding test is conducted on a specified gradient.

4.2 Wind speed

The average wind speed shall not exceed 5 m/s.

4.3 Ambient temperature

The ambient temperature shall be between 0 °C and 40 °C.

4.4 Test lane for basic tests and wet brake tests

The test area immediately after the point at which the test is to commence shall be marked with a lane of sufficient length for the moped to be brought to a stop.

In the case of two-wheeled mopeds (L_1), this lane shall be 2,5 m wide. In the case of three-wheeled mopeds (L_2), this lane shall have a width of 2,5 m plus the moped track.

5 Moped preparation

5.1 Tyres

The tyres shall be inflated to the moped manufacturer's recommended pressure levels.

5.2 Rider and masses carried

The minimum mass of the rider and any test equipment and instrumentation carried on the moped shall be 85 kg.

The mass distribution on the axles for laden moped tests shall be in accordance with the moped manufacturer's specifications and shall be noted in the test report.

5.3 Instrumentation

The moped shall be prepared for the tests specified in table 1 by the provision and/or calibration of existing instruments, as required.

Optional instruments may be added to provide data but care shall be taken to ensure that any equipment does not significantly affect the braking system performance or the dynamic characteristics of the moped.

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Table 1 — Tests and instrumentation

Test	Measurand	Example of instrument
Static test	Control force	Force meter
	Control travel	Linear potentiometer
	Force in transmission	Hydraulic pressure transducer; cable tension transducer
Basic test	Speed	Calibrated speedometer, photoelectronic measuring systems
	Brake temperature	Rubbing thermocouple, infrared "gun"
	Control force	Force meter
	Stopping distance	Chalk-pellet gun, third wheel, ink jet marker
	Motorcycle mass	Load cells, weighbridge
	Deceleration	Motometer, third wheel, recording deceleration meter
	Force in transmission	Hydraulic pressure transducer; cable tension transducer
Control travel	Linear potentiometer	