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Title: BS ISO 18164 Draft Motorcycle tyres rolling resistance measurement methods - Single point test.

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

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Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/ Figure/Table/Note	Type of comment	Comment (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



DRAFT International Standard

ISO/DIS 18164

Motorcycle tyres rolling resistance measurement methods — Single point test

ICS: 83.160.10; 83.160.01

ISO/TC 31

Secretariat: **ANSI**

Voting begins on:
2025-10-03

Voting terminates on:
2025-12-26

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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.

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ISO 18164 was prepared by Technical Committee ISO/TC 31, *Tyres, rims and valves*.

This first edition represents a compilation of three individual standards (ISO 8767:1992, ISO 9948:1992 and ISO 13327:1998) into a consolidated, technically revised single document.

In this second edition the measuring methods for passenger car, truck and bus tyres, and the optional test methods of the former [annex B](#) have been removed. These methods are to be found in the standard ISO 28580.

Motorcycle tyres rolling resistance measurement methods — Single point test

1 Scope

This International Standard specifies methods for measuring rolling resistance, under controlled laboratory conditions, for new pneumatic tyres designed primarily for use on motorcycles. The relationship between values obtained and the fuel economy of the vehicle is undetermined, and such values are not intended to be used to indicate levels of performance or quality.

This International Standard applies to motorcycle tyres.

Measurement of tyres using the methods of this standard enables comparisons to be made between the rolling resistance of new tyres when they are free-rolling straight ahead, in a position perpendicular to the drum outer surface, and in steady-state conditions.

In measuring tyre rolling resistance, it is necessary to measure small forces in the presence of much larger forces. It is, therefore, essential that equipment and instrumentation of appropriate accuracy be used.

During the measurement of rolling resistance using the methods of this standard, the value of the rolling circumference of the tyre can be derived using the drum method standard ISO 13328.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4223-1:2017, *Definitions of some terms used in the tyre industry — Part 1: Pneumatic tyres*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4223-1 and the following apply.

3.1 rolling resistance

F_r
loss of energy (or energy consumed) per unit of distance travelled

Note 1 to entry: The SI unit conventionally used for the rolling resistance is the newton metre per metre (N·m/m). This is equivalent to a drag force in newtons (N).

3.2 rolling resistance coefficient

C_r
ratio of the rolling resistance to the load on the tyre

Note 1 to entry: Rolling resistance is measured in newtons (N).

Note 2 to entry: Load on the tyre is measured in kilonewtons (kN).

Note 3 to entry: Although this quantity is dimensionless, it is conventionally expressed in N/kN.

3.3

capped inflation

process of inflating the tyre and allowing the inflation pressure to build up, as the tyre is warmed up while running

3.4

parasitic loss

loss of energy (or energy consumed) per unit distance excluding internal tyre losses, and attributable to aerodynamic loss of the different rotating elements of the test equipment, bearing friction and other sources of systematic loss which may be inherent in the measurement

Note 1 to entry: Depending on the method used, the aerodynamic loss of the tyre may or may not be included in the parasitic loss.

3.5

skim test reading

type of parasitic loss measurement, in which the tyre is kept rolling, without slippage, while reducing the tyre load to a level at which energy loss within the tyre itself is virtually zero

3.6

machine reading

type of parasitic loss measurement, involving losses of the test machine, exclusive of losses in the rotating spindle bearing, which carries the tyre and rim, and aerodynamic losses

3.7

moment of inertia

ratio of the torque applied to the tyre to the annular acceleration on the tyre

Note 1 to entry: See [Annex A](#).

4 Test methods

The following are alternative measurement methods. The choice of an individual method is left to the tester. For each method, the test measurements shall be converted to a force acting at the tyre/drum interface. The measured parameters are given below.

- a) Force method: the reaction force measured at the tyre spindle. This measured value also includes the bearing losses of the tyre spindle and the aerodynamic losses of the tyre and the wheel.
- b) Torque method: the torque input measured at the test drum (see NOTE).
- c) Power method: the measurement of the power input to the test drum (see NOTE).
- d) Deceleration method: the measurement of deceleration of the test drum and tyre assembly (see NOTE).

NOTE This measured value also includes the bearing and aerodynamic losses of the wheel, the tyre and the drum, losses that are also to be considered.

5 Test equipment

5.1 Drum specifications

5.1.1 Diameter

The test dynamometer shall have a cylindrical flywheel (drum)

— with a diameter of at least 1,5 m (reference drum diameter: 1,7 m)