

Road vehicles — Safety enhancement in conjunction with tyre inflation pressure monitoring

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National foreword

This British Standard reproduces verbatim ISO 21750:2006 and implements it as the UK national standard.

The UK participation in its preparation was entrusted to Technical Committee AUE/4, Tyres and wheels for motor vehicles, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

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Summary of pages

This document comprises a front cover, an inside front cover, the ISO title page, pages ii to v, a blank page, pages 1 to 18, an inside back cover and a back cover.

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Road vehicles — Safety enhancement in conjunction with tyre inflation pressure monitoring

*Véhicules routiers — Renforcement de la sécurité conjointement avec
le contrôle de la pression de gonflage des pneumatiques*



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Documents

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Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions.....	1
4 Symbols and abbreviations	5
5 Technical requirements and test procedures for system.....	5
5.1 General.....	5
5.2 Tyre Pressure Alerting System (TPAS)	6
5.3 Tyre Pressure Warning System (TPWS).....	8
5.4 Tyre Leak Alerting System (TLAS).....	9
6 Technical requirements and test procedures of system components	10
6.1 General.....	10
6.2 Wheel Fitted Component (WFC).....	11
6.3 External car body Fitted Components (EFCs)	15
6.4 Internal car body Fitted Components (IFCs).....	15
7 Human Machine Interface (HMI)	15
7.1 Identification of controls, tell-tales and optical indicators.....	15
7.2 Information to the driver	16
7.3 Owner's manual information	16
7.4 Compatibility with extended mobility systems.....	17
8 Recommended inflation pressure limits	17
Bibliography	18

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 21750 was prepared by Technical Committee ISO/TC 22, *Road vehicles*.

Introduction

A pneumatic tyre is a flexible component which is deflected when loaded. A tyre needs to be sufficiently inflated in order to be used at a limited deflection adapted to carry the wheel load as part of an axle load at a given speed and to transmit the expected longitudinal and transversal forces. The deflection is at the origin of the fatigue of a pneumatic tyre. Repeated excessive deflection may lead to tyre failure.

In real driving conditions, the physical parameter that most correlates to the tyre deflection is the tyre inflation pressure.

Therefore, the inflation pressure surveillance of pneumatic tyres for road vehicles has been identified as a major way to increase the active safety of the vehicles in service and to reduce the risks for the users.

The inflation pressure of pneumatic tyres for road vehicles shall be set by the vehicle users according to the car manufacturer's recommendations in coherency with the tyre standards which apply. The vehicle user is responsible for setting the correct tyre inflation pressure and its maintenance.

One or more significantly under-inflated tyres reduce the vehicle performances, especially the behaviour related to safety. Tyre pressures outside of the range recommended by the tyre or the vehicle manufacturer for the intended service may permanently alter the tyre characteristics up to a sudden pressure loss.

This International Standard does not imply that the tyre will resist under all circumstances before an alert is delivered by a Tyre Pressure Monitoring System (TPMS) described by this International Standard.

The primary objective of a TPMS is to alert the driver when an unsafe condition related to incorrect tyre inflation pressure is detected.

This International Standard contains proposals for the definition of terms used in both standardization working groups dealing with TPMSs and extended mobility systems.

Both working groups are invited to make comments and proposals, the goal being to finally share these definitions.

Each International Standard should contain the definitions which are typical to its subject and refer to the other International Standards for the other definitions.

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1 Scope

This International Standard deals with electronic Tyre Pressure Monitoring Systems (TPMS) for tubeless tyres in association or not with an extended mobility system, with a reference pressure lower or equal to 375 kPa, fitted in single formation on four wheeled vehicles. The systems are able to survey all tyres in use but not necessarily those in temporary use and provide information to the driver.

This International Standard establishes overall performance guidelines for the systems and their components, independently of the physical principles and the technological solution which have been selected to monitor the tyre pressure, to compute the difference to the requested level and to deliver a relevant information to the driver if the pressure of one, several or all tyres needs corrective action for the intended service conditions.

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 1000, *SI units and recommendations for the use of their multiples and of certain other units*

ISO 2575, *Road vehicles — Symbols for controls, indicators and tell-tales*

IEC CISPR 22, *Information technology equipment — Radio disturbance characteristics — Limits and methods of measurement*

IEC CISPR 24, *Information technology equipment — Immunity characteristics — Limits and methods of measurement*

ASTM B 117–73, *Standard Method of Salt Spray (Fog) Testing*

European Tyre & Rim Technical Organization, *ETRTO Standards Manual*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

tyre wheel assembly

assembly consisting of a wheel (rim and disc) fitted with a tyre, a valve, etc.

3.2

tyre

flexible component of the tyre wheel assembly made of rubber and reinforcing materials