First edition
2006-03-15

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

Reference number
ISO 21750:2006(E)

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Published in Switzerland

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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.

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.