TECHNICAL SPECIFICATION

ISO/TS 22239-1

Second edition
2018-05

Road vehicles — Child seat presence and orientation detection system (CPOD) —

Part 1: Specifications and test methods

Véhicules routiers — Système de détection de la présence d'un siège enfant et de son orientation (CPOD) —

Partie 1: Spécifications et méthodes d'essai

Reference number
ISO/TS 22239-1:2018(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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 22, *Road vehicles*, Subcommittee SC 36, *Safety and impact testing*.

This second edition cancels and replaces the first edition (ISO/TS 22239-1:2009), which has been technically revised to take into account the development in technology since the first edition was published.

A list of all parts in the ISO/TS 22239 series can be found on the ISO website.

Introduction

This document specifies a detection system for the automatic recognition of child seat presence and orientation detection system (CPOD) child seats placed on CPOD passenger seats.

The purpose of this detection system is to improve the overall safety performance of passenger restraint systems, particularly by reducing the risk of an airbag being deployed against a child seat placed on a passenger seat.

The CPOD system is not intended to encourage the placing of children on the front passenger seats of cars. However, in view of the fact that the following scenarios do occur in real life, children can be placed on front passenger seats in these cases:

— in 2-seater vehicles, which have no rear seats;

— when there are more than 2 or 3 children in one vehicle;

— when back seats are folded down for the transport of cargo;

— when the installation of a rearward-facing child restraint system (CRS) and the placing of the child in the CRS on the rear seats is very difficult or impossible, e.g. in 2-door vehicles;

— when the driver wants to see the baby and have easy access to it.

There might be benefit to be gained by encouraging the use of airbags on rear seats.

For the cases cited above, CPOD technology offers a reliable automatic solution for the protection of children against any possible risk caused by non-deactivated airbags.

Road vehicles — Child seat presence and orientation detection system (CPOD) —

Part 1: Specifications and test methods

1 Scope

This document specifies a child seat presence detection system that enables child seats placed on any passenger seats to be automatically detected where a child is at risk from an active airbag. The system provides the option of using additional information about the orientation of the child seat.

This document specifies the minimum functional requirements in order to ensure compatibility between child seat presence and orientation detection system (CPOD) child seats and CPOD passenger seats. Compatibility measurements and labelling requirements complement the obligatory specifications of this document.

This document also provides design recommendations which are not compulsory when claiming compliance with ISO/TS 22239. However, these recommendations, based on experience of proven designs, provide useful guidance to designers to avoid erroneous designs and thus, enable designers to reduce time and cost of CPOD development.

The tell-tale "child seat detected" required for a CPOD vehicle, the specific labelling required for a CPOD vehicle and CPOD child seat and the detailed information about the CPOD system functionality required for owner's manuals of CPOD vehicles and CPOD child seats will mitigate considerably the misuse probability. The document does not provide a failsafe physical mechanism that prevents the installation of non-CPOD child seats in a CPOD vehicle or vice versa.

ISO/TS 22239 applies only to child restraint systems in which the child is orientated in the forward or rearward driving direction.

NOTE 1 Throughout this document, the term "child seat" is used as an abbreviation of "CPOD child seat".

NOTE 2 Throughout this document, the term "passenger seat" is used as an abbreviation of "CPOD-equipped passenger seat".

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 6549:1999, *Road vehicles — Procedure for H- and R-point determination*

ISO/TS 22239-2:2018, *Road vehicles — Child seat presence and orientation detection system (CPOD) — Part 2: Resonator specification*

ISO/TS 22239-3:2017, *Road vehicles — Child seat presence and orientation detection system (CPOD) — Part 3: Labelling*

3 Terms and definitions

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