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Acoustics — Measurement of the influence of road surfaces on traffic noise

Part 3: Reference tyres

bsi.

National foreword

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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 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 43, *Acoustics*, Subcommittee SC 1, *Noise*.

This second edition cancels and replaces the first edition (ISO/TS 11819-3:2017), which has been technically revised.

The main change compared to the previous edition is as follows:

— update of the correction coefficient, β_t, in 9.3

A list of all parts in the ISO 11819 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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Introduction

The emission and propagation of road traffic noise greatly depends on road surface characteristics, notably on texture and porosity. Both these characteristics influence the generation of tyre/road noise and, in addition, the porosity can influence the propagation of sound, particularly when the propagation takes place close to the surface. Power unit noise, which is usually generated at a greater height above the road surface than tyre/road noise, may also be affected during propagation by the porosity characteristics of the road surface. These effects lead to differences in sound levels, associated with a given traffic flow and composition, from different road surfaces of up to 15 dB, which can have a substantial impact on the environmental quality alongside a road.

It is therefore important to be able to measure the influence of surface characteristics on tyre/road noise by a standardized method. Within the constraints of this method, ISO 11819-2 offers an objective rating of the road characteristics to satisfy a need expressed by road planners, road administrators, contractors, manufacturers of so-called "low-noise surfaces" and other parties concerned with the control of road traffic noise.

ISO 11819-2, which describes the so-called close-proximity (CPX) method, relies on special tyres to be used during the testing. However, it does not specify such tyres; instead, it is the purpose of this document to specify two reference tyres for use in the CPX method.

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Acoustics — Measurement of the influence of road surfaces on traffic noise —

Part 3: Reference tyres

1 Scope

This document specifies two tyres intended to serve as reference tyres when using the close-proximity (CPX) method specified in ISO 11819-2.

The CPX method is a method for evaluating different road surfaces with respect to their influence on traffic noise, under conditions when tyre/road noise dominates. This method ideally requires the use of standardized tyres, which have noise characteristics that are broadly representative of the effect of road surfaces on the noise emission of passenger car and heavy vehicle tyres. However, such tyres are not specified in ISO 11819-2. This document serves to specify these standardized tyres.

2 Normative references

The following documents are referred to in the text in such 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 868, *Plastics and ebonite — Determination of indentation hardness by means of a durometer (Shore hardness)*

ISO 3911, *Wheels and rims for pneumatic tyres — Vocabulary, designation and marking*

ISO 4000-1, *Passenger car tyres and rims — Part 1: Tyres (metric series)*

ISO 11819-2, *Acoustics — Measurement of the influence of road surfaces on traffic noise — Part 2: The close-proximity method*

ISO/TS 13471-1, *Acoustics — Temperature influence on tyre/road noise measurement — Part 1: Correction for temperature when testing with the CPX method*

ISO/IEC Guide 98-3, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 11819-2, ISO/TS 13471-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

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