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First edition
2008-05-01

Characterization of pavement texture by use of surface profiles —

Part 4: Spectral analysis of surface profiles

*Caractérisation de la texture d'un revêtement de chaussée à partir de
relevés de profils de la surface —*

Partie 4: Analyse spectrale des profils de la surface



Reference number
ISO/TS 13473-4:2008(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.

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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.

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An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

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ISO/TS 13473-4 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

ISO 13473 consists of the following parts, under the general title *Characterization of pavement texture by use of surface profiles*:

- *Part 1: Determination of Mean Profile Depth*
- *Part 2: Terminology and basic requirements related to pavement texture profile analysis*
- *Part 3: Specification and classification of profilometers*
- *Part 4: Spectral analysis of surface profiles* [Technical Specification]
- *Part 5: Determination of megatexture*

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Introduction

Pavement texture is one of the basic road surface characteristics and as such is related to many functional characteristics, such as noise emission from tyre-road interaction, friction between tyre and road, rolling resistance and tyre wear.

Spectral analysis of measured surface profiles is frequently used as a method of pavement characterization. However, recent practice has shown that the methodology of spectral analysis is not sufficiently well known in the field of pavement measurements to assure reproducible results. Improvement of the reproducibility by offering guidance in the form of a standardization document seems therefore advisable.

Although the principles of frequency analysis are used in various fields of signal processing, it seems that a tailored elaboration of these principles for the application in the field of pavement texture measurements is appropriate and will enhance the use of these methods and the quality of the results achieved.

This elaboration, in the form of an ISO Technical Specification, is intended to stimulate the international exchange of knowledge and data concerning pavement characteristics.