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Characterization of pavement texture by use of surface profiles

Part 2: Terminology and basic requirements related to pavement texture profile analysis



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- Association of Australasian Acoustical Consultants
- Australian Acoustical Society
- Australian Chamber of Commerce and Industry
- Australian Institute of Occupational Hygienists
- Austroroads
- Department of Defence (Australian Government)
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Preface

This Standard was prepared by the Australian members of the joint Standards Australia/Standards New Zealand Committee AV-001, Acoustics.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this document as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this document is to define terms, expressions and parameters that are related to the analysis of pavement texture, on roads as well as on airport runways and taxiways.

It defines terms and expressions related to profile representations of texture, which are anticipated to be useful in modelling of pavement characteristics such as tyre/road noise emission, tyre/road friction, tyre rolling resistance and tyre wear. In addition, some brief general information on pavement surface characteristics and their effects is presented.

This document also contains some basic requirements in connection with the use of the terms, expressions and parameters.

Profile analysis of machined surfaces is not included, since this subject is dealt with in other International Standards, for example ISO 3274, ISO 4287, ISO 4288, ISO 5436-1 and ISO 12085. Profile analysis of road unevenness, which is dealt with in ISO 8608, is also excluded.

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- (a) In the source text “this part of ISO 13473” should read “this document”.
- (b) A full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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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 3.

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 part of ISO 13473 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 13473-2 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*

Introduction

The terminology related to surface texture analysis by profiling techniques used in International Standards for applications other than pavements is often not appropriate for pavement analysis. Although many basic measurement and analysis procedures in these other applications are similar to those used in pavement analysis, the terminology has by tradition developed very differently. It is therefore necessary to issue this terminology standard for **pavement** applications, although attempts have been made to be consistent with the other terminology standards where suitable.

NOTES

Australian Standard®

Characterization of pavement texture by use of surface profiles

Part 2: Terminology and basic requirements related to pavement texture profile analysis

1 Scope

This part of ISO 13473 defines terms, expressions and parameters that are related to the analysis of pavement texture, on roads as well as on airport runways and taxiways. In particular, it defines terms and expressions related to profile representations of texture, which are anticipated to be useful in the modelling of pavement characteristics such as tyre/road noise emission, tyre/road friction, tyre rolling resistance and tyre wear. In addition, some brief general information on pavement surface characteristics and their effects is presented.

This part of ISO 13473 also contains some basic requirements in connection with the use of the terms, expressions and parameters.

Profile analysis of machined surfaces is not included, since this subject is dealt with in other International Standards, for example ISO 3274, ISO 4287, ISO 4288, ISO 5436-1 and ISO 12085. Profile analysis of road unevenness, which is dealt with in ISO 8608, is also excluded.

2 Normative reference

The following normative document contains provisions which, through reference in this text, constitute provisions of this part of ISO 13473. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of ISO 13473 are encouraged to investigate the possibility of applying the most recent edition of the normative document indicated below. For undated references, the latest edition of the normative document referred to applies. Members of ISO and IEC maintain registers of currently valid International Standards.

IEC 61260, *Electroacoustics — Octave-band and fractional-octave-band filters*

3 Terms and definitions

For the purposes of ISO 13473 (all parts), the following terms and definitions apply.

3.1 General terms

3.1.1

pavement texture **texture**

deviation of a pavement surface from a true planar surface, with a texture wavelength less than 0,5 m

Note 1 to entry: It is divided into micro-, macro- and megatexture according to [3.2](#).

3.1.2

surface profile **texture profile**

two-dimensional sample of the pavement texture generated if a sensor, such as the tip of a needle or a laser spot, continuously touches or shines on the pavement surface while it is moved along a line on the surface

Note 1 to entry: The profile of the surface is described by two coordinates: one along the surface plane, called “distance” (the abscissa), and the other in a direction normal to the surface plane, called “amplitude” (the ordinate); refer to the example illustrated in [Figure 1](#). The distance may be in a longitudinal or lateral (transverse) direction in relation to the travel direction on a pavement, or any direction between these.