ISO 13473-1:2019 (E)

Characterization of pavement texture by use of surface profiles — Part 1: Determination of mean profile depth

Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Test surfaces

- 4.1 Condition of the surface
- 4.2 Amount of data to be collected per field test section
- 4.2.1 Continuous measurements
- 4.2.2 Spot measurements
- 4.3 Amount of data to be collected on laboratory samples

5 Measurement instruments

- 5.1 Instruments in general
- 5.2 Vertical resolution
- 5.3 Horizontal resolution
- 5.4 Measurement speed
- 5.5 Alignment of sensor
- 5.6 Bandwidth of sensor and recording system
- 5.7 Performance check
- 5.8 Indication of invalid readings (drop-outs)
- 5.9 Sensitivity to vibrations

6 Measurement procedure

- 6.1 Performance checks
- 6.2 Measurements
- 6.3 Continuous or spot measurements

7 Data processing procedure

- 7.1 General
- 7.2 Summary of data processing steps
- 7.3 Drop-out correction and interpolation
- 7.4 Resampling to a certain spatial resolution
- 7.5 Spike identification and reshaping the profile
- 7.6 Removal of long-wavelength components and normalization of profile sharpness
- 7.7 Segment limiting
- 7.8 Peak and MSD determination
- 7.9 Extreme MSD value removal (optional)
- 7.10 Averaging of MSD to determine the MPD
- 7.11 Calculation of ETD (optional)

8 Measurement uncertainty assessment according to ISO/IEC Guide 98-3

9 Safety considerations

10 Test report

Annex A (informative) Texture ranges

Annex B (informative) Problems experienced on special surfaces

- **B.1 Porous surfaces**
- **B.2 Newly laid surfaces and humid/wet surfaces**
- **B.3 Surfaces with directional finish (e.g. grooved, ground or tined concrete)**

Annex C (informative) Procedure for sampling of mean segment depth values by spot measurements

- **C.1 Background**
- **C.2 Procedure**
- **C.2.1 General**
- **C.2.2 Case 1: Lane length L is shorter than 1 000 m (L ≤ 1 000 m)**
- **C.2.3 Case 2: Lane length L is longer than 1 000 m (L > 1 000 m)**
- **C.2.4 Example illustrating Case 2**

Annex D (normative) Data quality-enhancing procedures

- **D.1 General**
- **D.2 Summary of the specified data processing procedures**
- **D.3 Brief description of the procedures**
- **D.3.1 Drop-out identification (mandatory)**
- **D.3.2 Maximum use of data (mandatory where applicable)**
- **D.3.3 Spike identification (mandatory)**
- **D.3.4 Reshape profile (space domain, mandatory)**
- **D.3.5 Removal of slope and long-wavelength components (mandatory)**
- **D.3.6 Normalization of sharpness by low-pass filtering (space domain, mandatory)**
- **D.3.7 Extreme MSD value removal (space domain, optional, only for MSD determination)**
- **D.4 Aid in designing the filters**

Annex E (normative) Spike removal procedure

- **E.1 General**
- **E.2 Example**

Annex F (informative) Measurement uncertainty

- **F.1 General**
- **F.2 Expression for the calculation of the MPD value**
- **F.3 Sources of uncertainty**
- **F.4 Estimation of uncertainties of the method**

Annex G (informative) Performance check

Annex H (informative) Flow charts for determination of MSD and MPD

Page count: 43