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English Version

# Road and airfield surface characteristics - Part 15: Procedure for determining the skid resistance of a pavement surface using a device with longitudinal controlled slip (LFCI): The IMAG

Caractéristiques de surface des routes et aéroports - Partie 15: Mode opératoire de détermination de l'adhérence d'un revêtement de chaussée à l'aide d'un dispositif à glissement longitudinal contrôlé (CFLI): IMAG

Oberflächeneigenschaften von Straßen und Flugplätzen - Teil 15: Verfahren zur Bestimmung der Griffigkeit von Fahrbahndecken durch Verwendung eines Geräts mit geregeltem Schlupf in Längsrichtung (LFCE): Das IMAG-Gerät

This Technical Specification (CEN/TS) was approved by CEN on 1 March 2014 for provisional application.

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# Foreword

This document (CEN/TS 15901-15:2014) has been prepared by Technical Committee CEN/TC 227 “Road materials”, the secretariat of which is held by DIN.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights other than those identified above. CEN [and/or] CENELEC shall not be held responsible for identifying any or all such patent rights.

CEN/TS 15901, *Road and airfield surface characteristics*, is composed with the following parts:

— *Part 1: Procedure for determining the skid resistance of a pavement surface using a device with longitudinal fixed slip ratio (LFCS): RoadSTAR*;

— *Part 2: Procedure for determining the skid resistance of a pavement surface using a device with longitudinal controlled slip (LFCRNL): ROAR (Road Analyser and Recorder of Norsemeter)*;

— *Part 3: Procedure for determining the skid resistance of a pavement surface using a device with longitudinal controlled slip (LFCA): The ADHERA*;

— *Part 4: Procedure for determining the skid resistance of pavements using a device with longitudinal controlled slip (LFCT): Tatra Runway Tester (TRT)*;

— *Part 5: Procedure for determining the skid resistance of a pavement surface using a device with longitudinal controlled slip (LFCRDK): ROAR (Road Analyser and Recorder of Norsemeter)*;

— *Part 6: Procedure for determining the skid resistance of a pavement surface by measurement of the sideway force coefficient (SFCS): SCRIM®*;

— *Part 7: Procedure for determining the skid resistance of a pavement surface using a device with longitudinal fixed slip ratio (LFCG): the GripTester®*;

— *Part 8: Procedure for determining the skid resistance of a pavement surface by measurement of the sideway-force coefficient (SFCD): SKM*;

— *Part 9: Procedure for determining the skid resistance of a pavement surface by measurement of the longitudinal friction coefficient (LFCD): DWWNL skid resistance trailer*;

— *Part 10: Procedure for determining the skid resistance of a pavement surface using a device with longitudinal block measurement (LFCSK): the Skiddometer BV-8*;

— *Part 11: Procedure for determining the skid resistance of a pavement surface using a device with longitudinal block measurement (LFCSR): the SRM*;

— *Part 12: Procedure for determining the skid resistance of a pavement surface using a device with longitudinal controlled slip: the BV 11 and Saab friction tester (SFT)*;

— *Part 13: Procedure for determining the skid resistance of a pavement surface by measurement of a sideway force coefficient (SFCO): the Odoliograph*;

— *Part 15: Procedure for determining the skid resistance of a pavement surface using a device with longitudinal controlled slip (LFCI): The IMAG* [the present document].

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus,

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Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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## 1 Scope

This Technical Specification describes a method only used on airports for determining the skid resistance of pavements by measurement of the longitudinal friction coefficient LFCI.

The method provides a measure of the wet skid resistance properties of a bound surface by measurement of the longitudinal friction coefficient using a trailer with a standard slip ratio of 15 %. The slip ratio can be chosen between 0 % and 100 % for research application.

The test tyre is dragged over a pre-wetted pavement under vertical force and constant speed conditions while the test tyre is parallel to the direction of motion.

This Technical Specification covers the operation of the IMAG device.

The skid resistance of a pavement is determined by friction measurements at different speeds. Tests can be performed between 40 km/h and 120 km/h but standard test speeds are 40 km/h, 65 km/h and 95 km/h. Low speed measurements asses the microtexture while high speed measurements asses the macrotexture. The skid resistance is reported as friction measurements at these speeds and by comparison with the minimum friction level.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

ASTM E670-09, *Standard Test Method for Side Force Friction on Paved Surfaces Using the Mu-Meter*

ASTM E2100-04, *Standard Practice for Calculating the International Runway Friction Index*

PIARC Technical Document. *Specification for a standard test tyre for friction coefficient measurement of a pavement surface: Smooth test tyre* (2004-03)

## 3 Recommended uses

The IMAG is used in the following fields of application:

— monitoring of airport pavements (Pavement Management) according to ICAO Annex 14 Attachment A 7,

— approval of new surfacing according to ICAO Annex 14 Attachment A 7,

— investigation of surface skid resistance,

— measurements on project-level compliance,

— comparative measurements among different devices,

— measurements on contaminated (ice or snow covered) airport pavements (not covered by this Technical Specification) according to ICAO Annex 14 Attachment A 6,

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