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BSI Standards Publication

Railway Applications — Wheel-rail contact geometry parameters — Technical report and background information about EN 15302

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National foreword

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Applications ferroviaires - Paramètres géométriques du contact roue-rail - Rapport technique et informations générales sur l'EN 15302:2021

Bahnanwendungen - Rad-Schiene-Berührgeometrieparameter - Technischer Bericht und Hintergrundinformationen zur EN 15302

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European foreword

This document (CEN/TR 17792:2022) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

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1 Scope

This document provides background information regarding the changes from EN 15302:2008+A1:2010 to the revised version dated 2021, including the reasons for decisions and additional explanation and guidance that is not appropriate in the standard.

The range of equivalent conicity results obtained with different software tools is described. The additional wheel-rail contact parameters, rolling radii coefficient and nonlinearity parameter, are explained. More information is also provided on the different calculation methods and the updated reference profiles for the assessment. The influence of simplifications used in determination of equivalent conicity is discussed.

To provide more information on the importance of considering the complete measurement and calculation process, methods for plausibility checks, eliminating outliers and assessing the uncertainty and repeatability of measurements are included as well as assessments of the smoothing process.

Guidance is given on fields of application of the wheel-rail contact parameters, on the selection of appropriate reference profiles (choice of reference rail profile and rail inclination for assessing wheel profiles and vice versa) and on handling special cases.

As some references in EN 14363 to wheel-rail contact test conditions have caused difficulties in understanding, clarifications issued by ERA are mentioned.

Interpretation of equivalent conicity results, using tools such as conicity maps, is discussed and various approximations such as 'quick conicity' assessments are also described.

Information is included on possible additional wheel-rail contact parameters, not yet ready for standardization, but where further experience is needed.

NOTE In this document the commonly used term "wheel-rail contact geometry" is used as a synonym for the more precise term "wheelset-track contact geometry".

2 Normative references

There are no normative references in this document.

3 Terms and definitions

No terms and definitions are listed in this document.

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/