



SLOVENSKI STANDARD
SIST EN 14363:2016+A1:2019/oprA2:2022
01-januar-2022

Železniške naprave - Preskušanje in simuliranje voznih karakteristik pri prevzemu železniških vozil - Preskušanje obnašanja med vožnjo in mirovanjem - Dopolnilo A2

Railway applications - Testing and Simulation for the acceptance of running characteristics of railway vehicles - Running Behaviour and stationary tests

Bahnanwendungen - Versuche und Simulationen für die Zulassung der fahrtechnischen Eigenschaften von Eisenbahnfahrzeugen - Fahrverhalten und stationäre Versuche

Applications ferroviaires - Essais et simulations en vue de l'homologation des caractéristiques dynamiques des véhicules ferroviaires - Comportement dynamique et essais stationnaires

Ta slovenski standard je istoveten z: EN 14363:2016+A1:2018/prA2:2021

ICS:

45.060.01 Železniška vozila na splošno Railway rolling stock in general

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14363:2016+A1:2019/oprA2:2022

en,fr,de

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

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November 2021

ICS 45.060.01

English Version

Railway applications - Testing and Simulation for the acceptance of running characteristics of railway vehicles - Running Behaviour and stationary tests

Applications ferroviaires - Essais et simulations en vue de l'homologation des caractéristiques dynamiques des véhicules ferroviaires - Comportement dynamique et essais stationnaires

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This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 256.

This draft amendment A2, if approved, will modify the European Standard EN 14363:2016+A1:2018. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 14363:2016+A1:2018/prA2:2021) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 14363:2016+A1:2018.

In comparison with the previous edition, the following technical modifications have been made:

- Introducing ERA OPI in 7.3.1, Table 2;
- Deleting informative Annex X;
- Update of informative Annex ZA.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s) / Regulation(s).

For relationship with EU Directive(s) / Regulation(s), see informative Annex ZA, which is an integral part of this document.

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Introduction

In this document, the clarifications published in ERA/OPI 2018-3 related to wheel rail contact conditions during on-track testing are incorporated.

Informative annex has been deleted in agreement with ERA, because the requirements are published in Swiss NNTR.

The informative Annex ZA is updated according to the new rules.

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1 Modifications to 7.3.1 General, Table 2

Replace in Table 2 line “Target Test Conditions – requirements for wheel rail contact geometry” by the following:

Target test conditions	Requirements for wheel rail contact geometry ^k , see also normative Annex O, normative Annex P, informative Annex Q and EN 15302	for at least 3 times 100 m track lengths (not overlapping): ^{r,1} — for $V \leq 120$ km/h: $\tan \gamma_e \geq 0,40$ — for $120 \text{ km/h} < V \leq 300$ km/h: $\tan \gamma_e \geq 0,534$ (rounded to two decimal digits) — for $V > 300$ km/h: $\tan \gamma_e \geq 0,20$ Possibly exclude track sections with exceptional values of conicity outside the expected range of operation	— the majority of conditions shall be representative of normal service ^s — avoid a narrow range of contact geometry conditions ^s (equivalent conicities) — possibly exclude track sections with exceptional values of conicity outside the expected range of operation — some sections with $\tan \gamma_e < 0,05$ shall be included in the statistical assessment to cover low frequency body motions ^{t, p2}	—	—	avoid a narrow range of contact geometry conditions ^s (radial steering index) ^m
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and replace in the footnote section of Table 2, footnote r by the following:

- ^r In cases where harmonic oscillations, during stability testing or in the track section with $\tan \gamma_e < 0,05$, below the safety limits occur during test runs with a small gauge clearance (for example $(\text{TG-SR}) \leq 4$ mm), it is recommended to investigate the effect of increased gauge on this behaviour, for example for gauge clearance (TG-SR) up to 10 mm.

Typical national requirements to test stability at higher conicities than required by this standard maybe not realistic in combination with such a high gauge clearance. Therefore, the recommended investigations for a gauge clearance up to 10 mm are probably not suitable for high conicities above the values specified in this standard.

and add in the footnote section of Table 2, footnote s as follows:

- ^s It is not necessary to investigate contact conditions with measured rail profiles on the tracks used for the tests. The reason is that contact conditions have a minor influence on the results of the statistical evaluation of the assessment quantities compared to other influences.

For the choice of a suitable (representative) wheel profile, the following aspects should be taken into account:

- “Pure” conical profiles (Example: GV 1:40 according to EN 13715) deliver a narrow range of contact geometry conditions and are therefore not suitable. An exception could be a vehicle in which the frequency of re-profiling allows a permanent conical profile (e.g. 50 000 km);
- Any other new profile (Examples are S1002 and EPS according to EN 13715) provides a range of contact conditions in combination with the rail profiles of the test lines which generally vary along the test routes and could be generally suitable;

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- Any worn profile that emerged during operation as a result of operation over a long distance is generally suitable (An example is the R-profile which is used in France as test profile for vehicles equipped with new GV 1:40 profiles according to EN 13715);
- Independently from the points above it is recommended to avoid test wheel profiles, which would not be used in normal service conditions on the network on which the tests are performed (One example that should be avoided for the purpose of testing is an S1002 profile in the UK-network) as the vehicle response could be unnecessarily unfavourable. This includes theoretical wheel profiles which might have been created to test stability under extreme conditions or low conicity conditions.

Investigations of contact conditions (equivalent conicity) using measured rail profiles are only necessary in a few sections to:

- demonstrate that some sections with $\tan \gamma_e < 0,05$ are included in the statistical evaluation of test zone 1;
- “exclude possibly track sections with exceptional values of conicity outside the expected range of operation” (which is not required but could avoid unfavourable results);


quantify the maximum equivalent conicity for which the stability of the vehicle was tested.

2 Modification to informative Annex X

Delete the whole annex.

3 Modification to informative Annex ZA

Replace informative Annex ZA by the following:



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Annex ZA (informative)

Relationship between this European Standard and the Essential Requirements of EU Directive (EU) 2016/797 aimed to be covered

This European Standard has been prepared under a Commission's standardization request "M/483 Mandate to CEN and CENELEC for Standardisation in the field of interoperability of the rail system" to provide one voluntary means of conforming to (parts of) Essential Requirements of Directive (EU) 2016/797 of the European Parliament and of the Council of 11 May 2016 on interoperability of the rail system (recast) as specified in the relevant technical specifications for interoperability (TSI).

Once this standard is cited in the Official Journal of the European Union under that Directive, compliance with the normative clauses of this standard given in Table ZA.1 for TSI locomotive and passenger RST confers, within the limits of the scope of this standard, a presumption of conformity with the corresponding Essential Requirements of that Directive as specified in the technical specifications for interoperability (TSI), and associated EFTA regulations.

Table ZA.1 — Correspondence between this European Standard, Commission Regulation (EU) N° 321/2013 concerning the Technical Specification for Interoperability (TSI) relating to the subsystem 'locomotive and passenger RST' of the rail system in the European Union* and Directive (EU) 2016/797

Essential Requirements of Directive (EU) 2016/797	Clauses of the Annex to the Technical Specification for Interoperability (TSI)	Clause/ subclauses of this European Standard	Comments
Section 3 of the Annex to the TSI indicates the correspondence between the TSI clauses and the Essential Requirements of Directive (EU) 2016/797	4.2.3.4.2.(1) Running dynamic behaviour	1 Scope, 4) Operating conditions	This standard is not directly applicable to railways with non-standard gauge tracks; but assessment can be conducted by analogy with this document, e.g. the test procedures described in this standard can be applied also to vehicles operated in networks with other track gauges (e.g. 1 524 mm and 1 668 mm). The related limit values and test conditions could be different. They are specified nationally taking into account track design and operating conditions.

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*** As amended by Commission Regulation (EU) No 1236/2013, Commission Regulation (EU) 2015/924, Commission Implementing Regulation (EU) 2019/776 and Commission Implementing Regulation (EU) 2020/387**

NOTE The Technical Specification for Interoperability (TSI) can refer to other clauses of this standard making the application of those clauses mandatory. Possible references to such clauses are found in the Appendix D to the TSI.

WARNING 1 — Presumption of conformity stays valid only as long as a reference to this European Standard is maintained in the list published in the Official Journal of the European Union. Users of this standard should consult frequently the latest list published in the Official Journal of the European Union.

WARNING 2 — Other Union legislation may be applicable to the products falling within the scope of this standard.

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