

|  |                                                             |                                            |
|--|-------------------------------------------------------------|--------------------------------------------|
|  | <b>Železnice. Koľaj. Prieskum kvality geometrie koľaje.</b> | <b>TNI<br/>CEN/TR 16513</b><br><br>73 6318 |
|--|-------------------------------------------------------------|--------------------------------------------|

Railway applications - Track - Survey of track geometry quality

Táto technická normalizačná informácia obsahuje anglickú verziu CEN/TR 16513:2014.  
This Technical standard information includes the English version of CEN/TR 16513:2014.

Táto technická normalizačná informácia bola oznámená vo Vestníku ÚNMS SR č. 05/14

**119061**

---

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2014  
Tento dokument a ani jeho časti sa nesmú rozmnožovať a rozširovať v akejkoľvek podobe  
a akýmkoľvek prostriedkami bez písomného povolenia ÚNMS SR.

ICS 93.100

English Version

## Railway applications - Track - Survey of track geometry quality

Applications ferroviaires - Voie - Analyse de la qualité de la  
géométrie de la voie

Bahnanwendungen - Oberbau - Überblick über die  
geometrische Gleislagequalität

This Technical Report was approved by CEN on 18 May 2013. It has been drawn up by the Technical Committee CEN/TC 256.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, 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 United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

# Contents

Page

|                                                                                                                                    |           |
|------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>Foreword</b>                                                                                                                    | <b>3</b>  |
| <b>1 Scope</b>                                                                                                                     | <b>4</b>  |
| <b>2 Terms and definitions</b>                                                                                                     | <b>4</b>  |
| <b>3 Symbols and abbreviations</b>                                                                                                 | <b>4</b>  |
| <b>4 Methodology</b>                                                                                                               | <b>5</b>  |
| 4.1 General considerations and confidentiality                                                                                     | 5         |
| 4.2 Collected data                                                                                                                 | 5         |
| 4.2.1 Scope of survey                                                                                                              | 5         |
| 4.2.2 Speed classes applied                                                                                                        | 5         |
| 4.2.3 Calculation of standard deviation                                                                                            | 6         |
| 4.2.4 Calculation of cumulative frequency distributions                                                                            | 6         |
| 4.3 Data processing                                                                                                                | 6         |
| <b>5 Participating networks and involvement</b>                                                                                    | <b>6</b>  |
| 5.1 Participating networks                                                                                                         | 6         |
| 5.2 Sample size of track data                                                                                                      | 7         |
| <b>6 Results</b>                                                                                                                   | <b>7</b>  |
| 6.1 Results for standard deviation of longitudinal level                                                                           | 7         |
| 6.2 Results for standard deviation of alignment                                                                                    | 9         |
| 6.3 Observation on results                                                                                                         | 11        |
| <b>7 Application of the results to EN 13848-6</b>                                                                                  | <b>12</b> |
| <b>Annex A (informative) Tables for cumulative frequency distributions for average track quality of all participating networks</b> | <b>13</b> |
| <b>Annex B (informative) Spread of data collected</b>                                                                              | <b>15</b> |
| <b>Bibliography</b>                                                                                                                | <b>17</b> |

## **Foreword**

This document (CEN/TR 16513:2014) has been prepared by Technical Committee CEN/TC 256 "Railway applications", 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. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

## 1 Scope

CEN/TC 256/SC 1/WG 28 "Railway applications/Infrastructure/Track geometry quality" conducted a survey of the geometric quality of track across European railway networks. This was to get an understanding and overview of the track geometry across Europe in order to support the definition of track geometric quality classes for the writing of EN 13848-6.

This Technical Report describes the methodology used for the survey and gives the results.

## 2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**2.1**  
**track quality index**  
*TQI*  
value that characterises track geometry quality of a track section based on parameters and measuring methods compliant with the EN 13848 series

**2.2**  
**track quality class**  
*TQC*  
characterisation of track geometry quality as a function of speed and expressed as a range of *TQIs*

**2.3**  
**re-colouring**  
algorithm which converts one signal into a different signal and which is used in the EN 13848 series to convert a chord measurement signal into a *D1* or *D2* measurement signal

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**