Railway applications - Track - Track geometry quality - Part 4: Measuring systems - Manual and lightweight devices

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 13848-4:2025 sisaldab Euroopa standardi EN 13848-4:2025 ingliskeelset teksti.	This Estonian standard EVS-EN 13848-4:2025 consists of the English text of the European standard EN 13848-4:2025.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 25.06.2025.	Date of Availability of the European standard is 25.06.2025.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 93.100

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13848-4

June 2025

ICS 93.100

Supersedes EN 13848-4:2011

English Version

Railway applications - Track - Track geometry quality - Part 4: Measuring systems - Manual and lightweight devices

Applications ferroviaires - Voie - Qualité géométrique de la voie - Partie 4: Systèmes de mesure - Dispositifs manuels et de faible poids

Bahnanwendungen - Oberbau - Qualität der Gleisgeometrie - Teil 4: Messsysteme - Handgeführte und leichte Vorrichtungen

This European Standard was approved by CEN on 14 April 2025.

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

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Ref. No. EN 13848-4:2025 E

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European foreword

This document (EN 13848-4:2025) has been prepared by Technical Committee CEN/TC 256 “Railway applications”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2025, and conflicting national standards shall be withdrawn at the latest by December 2025.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13848-4:2011.

The main changes compared to the previous edition are listed below:

— change of labels and definitions for lightweight devices;

— update of content of Annexes A and B;

— modification of certain limit values in Annex C (validation criteria);

— integration of Annex D (uncertainty measurement);

— simplification of the main text structure.

In this document, the Annexes A and C are normative and the Annexes B and D are informative.

This document is one in the EN 13848 series *Railway applications – Track – Track geometry quality*, the parts of which are listed below:

— *Part 1: Characterization of track geometry*

— *Part 2: Measuring systems – Track recording vehicles*

— *Part 3: Measuring systems – Track construction and maintenance machines*

— *Part 4: Measuring systems – Manual and lightweight devices*

— *Part 5: Geometric quality levels – Plain line, switches and crossings*

— *Part 6: Characterization of track geometry quality*

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

1 Scope

This document specifies the minimum requirements to be met for track geometry measurements by lightweight devices including track geometry recorders working up to walking speed and track geometry instruments to enable the assessment of track geometry quality using one or more of the parameters described in EN 13848-1.

In the case of lightweight devices working at a speed higher than walking speed, or in the case of track geometry measuring systems installed on vehicles but not measuring in loaded conditions as specified in EN 13848-1, the validation of the system can be done based on the test procedure specified in Clause 6 of EN 13848-2:2020.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13848-1:2019, *Railway applications - Track - Track geometry quality - Part 1: Characterization of track geometry*

EN 13848-2:2020, *Railway applications - Track - Track geometry quality - Part 2: Measuring systems - Track recording vehicles*

EN 13848-5, *Railway applications - Track - Track geometry quality - Part 5: Geometric quality levels - Plain line, switches and crossings*

EN 13848-6, *Railway applications - Track - Track geometry quality - Part 6: Characterization of track geometry quality*

EN 17343, *Railway applications - General terms and definitions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 17343 and the following apply:

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp/

— IEC Electropedia: available at https://www.electropedia.org/

3.1
lightweight device
device that does not load the track as specified in Clause 7 of EN 13848-1:2019

3.2
track geometry recorder
TGR
lightweight device designed for measuring one or more track geometry parameters, having the following characteristics:

— hauled, self-propelled or moved by human force;

— capable of automatic measurement at a constant and prescribed sampling distance with each measurement localized