

**Raudteelased rakendused. Gabariidid. Osa 2:
Raudteeveeremi gabariit**

**Railway applications - Gauges - Part 2: Rolling stock
gauge**

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

Railway applications - Gauges - Part 2: Rolling stock gauge

Applications ferroviaires - Gabarits - Partie 2: Gabarit du matériel roulant

Bahnanwendungen - Begrenzungslinien - Teil 2: Fahrzeugbegrenzungslinien

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Foreword

This document (EN 15273-2:2013) 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of an identical text or by endorsement, at the latest by November 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.

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.

This document replaces EN 15273-1:2009.

This document has been prepared under a mandate given to CEN/CENELEC/ETSI by the European Commission and the European Free Trade Association, and supports the essential requirements of EU Directive 2008/57/EC.

For the relationship with Directive 2008/57/EC, see informative Annex ZA, which is an integral part of this document.

This document replaces document EN 15273-2:2009 resulting from review from national standards organizations relating to the symbols, formulae and other incorrect technical content in the 2009 document.

Modifications compared to EN 15273-2:2009:

- introduction: change to text;
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- 2: new normative reference (EN 15663);
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- A.3.16.7.1: new Figure A.18 a & b, new references in the text, new Formulae (A.113) and (A.114);
- A.3.16.7.2: new Figures A.19 a & b, new references in the text, new Formulae (A.115) and (A.116);
- A.3.16.9: corrections to the text, new Formulae (A.117), (A.118), (A.119) and (A.120);
- A.4: new symbol in the text, change to Table A.4;
- B.2.2.2: new Formulae (B.3) and (B.4);
- B.3.2: new introduction;
- B.3.3: new values, new text, new Formulae (B.6), (B.8), (B.9), (B.10), (B.13), (B.14), (B.15);
- B.3.4: new text, new Formulae (B.16), (B.17), (B.18), (B.19), (B.20), (B.21), (B.22), (B.23), (B.24);
- B.3.5: new text, new references, new Formulae (B.25), (B.26), (B.27), (B.28), (B.29), (B.30), (B.31), (B.32), (B.33), (B.34), (B.35);
- B.3.6: new Formulae (B.36), (B.37), (B.38), (B.39), (B.40), (B.41), (B.42), (B.43), (B.44), (B.45), (B.46);
- C.1.2.3: new title, new text, new reference to Annex D;
- Annex D: new title;
- D.1: new title, new Figure D.1;
- D.2: new article (8 pages);
- E.1.2.2: new title, new text, new reference to Annex D;
- F.2.3: new text;
- F.2.6: new text;
- F.2.7: new text;
- F.3.1: new symbols;
- F.3.2.1: deletion of old clause, replacement with a new text, new Formulae (F.1), (F.2), (F.3) and (F.4), new Table F.1;
- F.4: new key for Figure F.1;
- F.5: new symbols, new text, new Formulae (F.5), (F.6) and (F.7);
- F.6: new symbols, new text, new Formulae (F.8), (F.9);
- F.7.2: new reference to RAMO2;
- F.8.1 & 2 & 3: new text, new reference, new symbols, new Formulae (F.10), (F.11) and (F.12);

- F.8.4: deletion of the clause;
- F.9.1 & 2 & 3: new text, new reference, new symbols, new Formulae (F.13), (F.14) and (F.15);
- F.9.4: deletion of the clause;
- G.1: new text;
- G.3: new title, new text, new reference to Annex D;
- G.4 and its subclauses: full re-write of this clause, new Formulae (G.1), (G.2), (G.3), (G.4), (G.5), (G.6), (G.7), (G.8), (G.9), (G.10), (G.11), (G.12), (G.13), (G.14), (G.15), (G.16), (G.17), (G.18), (G.19), (G.20), (G.21), (G.22), (G.23), (G.24), (G.25), (G.26), (G.27), (G.28), (G.29);
- H.2.3: change to text;
- H.2.4: change to text;
- H.4 and its subclauses: new Formulae (H.1), (H.2), (H.3), (H.4), (H.5), (H.6), (H.7), (H.8), (H.9), (H.10), (H.11), (H.12), (H.13), (H.14), (H.15), (H.16), (H.17), (H.18), (H.19), (H.20), (H.21), (H.22), (H.23), (H.24), (H.25), (H.26), (H.27), (H.28), (H.29), (H.30);
- H.5 and its subclauses: new Formulae (H.31), (H.32), (H.33), (H.34), (H.35), (H.36), (H.37), (H.38), (H.39);
- I.1: new introduction;
- I.4 and its subclauses: new text, new symbols and new Formulae (I.1), (I.2), (I.3), (I.4), (I.5), (I.6), (I.7), (I.8), (I.9), (I.10), (I.11), (I.12), (I.13), (I.14), (I.15), (I.16), (I.17), (I.18), (I.19), (I.20), (I.21);
- I.5 and its subclauses: new Formulae (I.24), (I.25), (I.26), (I.27), (I.28), (I.29), (I.30), (I.31), (I.34), (I.35);
- I.6 and its subclauses: new Formulae: (I.40), (I.41), (I.42), (I.43), (I.44), (I.45), (I.47), (I.50), (I.51);
- J.1: new Table J.1;
- J.3: new Figure J.1;
- J.4: new title;
- J.6: new Figure J.4;
- J.7 and its subclauses: change to text, new Formulae (J.1), (J.2), (J.3), (J.4), (J.5), (J.6), (J.7), (J.8), (J.9), (J.10), (J.11), (J.12), (J.13) and new tables J.3, J.5;
- J.8.10: new text;
- J.8.11: new Formulae (J.14) and (J.15);
- J.8.12: new Formulae (J.16) and (J.17);
- J.8.13: new Formulae (J.18) and (J.19);
- J.8.14: new Formulae (J.20) and (J.21);
- J.8.15: new text;

- J.10.4: new formulae in the text;
- Annex K: new title, new introduction;
- K.2.2: new Formulae (K.1), (K.2), (K.3), new formulae in the text;
- L.1.2.2: change to formulae in the text;
- L.2.2: change to formulae in the text;
- L.3.2: new symbol with new values;
- L.4.1: change to the last sentence;
- L.4.2.1: change to formulae and data in the text;
- L.4.2.2: change to formulae in the text;
- L.4.3: change to formulae in the text;
- L.4.4: New Table L.2;
- M.2: change to text;
- Annex N: change to the annex to informative status;
- N.2.2: change to Formulae(N.1), (N.2), (N.3), (N.4), (N.5);
- N.2.3: changes to Formulae(N.6), (N.7), (N.8);
- N.3.2.1: change to text;
- N.3.8.2: change to Formulae(N.9), (N.10), (N.11), change to formulae in the text;
- N.3.8.3: change to symbols in the text, change to Formulae (N.12), (N.13), (N.14), (N.15), (N.16), (N.17), (N.18), (N.19), (N.20), (N.21), (N.22), (N.23), (N.24), (N.25), (N.26), (N.27), (N.28), (N.29), (N.30), (N.31), (N.32), (N.33), (N.34), (N.35), (N.36), (N.37), (N.38), (N.39), (N.40), (N.41);
- N.3.8.4: change to text;
- N.3.9: change to Formulae (N.42), (N.43), (N.44), (N.45), (N.46), (N.47), (N.48), (N.49), (N.50), (N.51);
- N.3.10: new Table N.4;
- N.4: deletion of the clause (25 pages);
- O.2.3: change to text;
- O.5: new key for Figure O.2;
- Annex P: creation of the new annex on Spanish gauges (42 pages);
- Annex Q: new reference to EN 15273-1:2013;
- Annex R: new introduction;
- R.2: change to text at points 8), 9) and 11);

- Annex S: change to the last sentence;
- Bibliography: change to the entire bibliography.

Common rules for infrastructure and rolling stock according to EN 15273-1 are applicable.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: 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 the United Kingdom.

Introduction

EN 15273 comprises three parts, namely:

- EN 15273-1 that covers general definitions and the rules applicable to rolling stock and structure gauges;
- EN 15273-2 that gives the rules for calculating the rolling stock gauges and the associated rules for the various profiles;
- EN 15273-3 that gives the definition for the structure gauges. It explains the parameters concerned and gives a possible methodology for determining the structure gauges and the distances between centres of the tracks.

The gauges included in these standards have been developed as part of their application on European railways. Other networks such as regional, local, urban and suburban networks may apply the gauge regulations defined in this standard. They may be required to make use of specific methodologies, particularly where:

- specific rolling stock is used (for example: underground trains, trams, etc. operating on two rails);
- the range of curve radii is different;
- others, etc.

The catalogue included in this European Standard only includes a selection of gauges and is not exhaustive. Each network is free to define the gauges in accordance with their own needs.

1 Scope

This document is applicable to the authorities involved in all types of railway operation.

This European Standard is applicable to new vehicle designs, to modifications and to the checking of the gauge for vehicles already in use.

The application of the rules of this European Standard makes it possible to determine the maximum dimensions of vehicles related to the structures.

This European Standard contains:

- the associated rules for all the gauges for rolling stock;
- the requirements for composing the technical gauge report to submit to the Acceptance Authority in order to confirm vehicle conformity to this standard;
- the requirements for maintaining the vehicle characteristics influencing gauging throughout its operational life.

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. EN 12299, *Railway applications — Ride comfort for passengers — Measurement and evaluation*

EN 14363:2005, *Railway applications — Testing for the acceptance of running characteristics of railway vehicles — Testing of running behaviour and stationary tests*

EN 15273-1:2013, *Railway applications — Gauges — Part 1: General — Common rules for infrastructure and rolling stock*

EN 15273-3:2013, *Railway applications — Gauges — Part 3: Structure gauges*

EN 15663, *Railway applications — Definition of vehicle reference masses*

EN 50119, *Railway applications — Fixed installations — Electric traction overhead contact lines*

3 Terms and definitions

For the purposes of this document, the following terms and definitions specific to part 2 apply.

3.1

empty vehicle

vehicle load state: definition according to EN 15663

3.2

[.....]₀

value to be considered only when it is positive; negative values are regarded as being equal to zero

3.3

|...|

mathematical absolute value