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**Železniške naprave - Akustika - Merjenje hrapavosti (neravnin) vozne površine tirnice in kolesa pri povzročanju hrupa**

Railway applications - Acoustics - Rail and wheel roughness measurement related to noise generation

Bahnanwendungen - Akustik - Messung der Schienen- und Radrauheit im Hinblick auf die Entstehung von Rollgeräuschen

Applications ferroviaires - Acoustique - Mesurage de la rugosité des rails et des roues relative à la génération du bruit de roulement

**Ta slovenski standard je istoveten z: EN 15610:2019/prA1**

[SIST EN 15610:2019/oprA1:2024](http://standards.slovenski.si/standards/sist/en/15610/oprA1/15610:2019/oprA1:2024)

**ICS:**

17.140.30	Emisija hrupa transportnih sredstev	Noise emitted by means of transport
45.080	Tračnice in železniški deli	Rails and railway components
93.100	Gradnja železnic	Construction of railways

**SIST EN 15610:2019/oprA1:2024** en,fr,de



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**EN 15610:2019**  
**prA1**

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ICS 17.140.30; 93.100

English Version

## Railway applications - Acoustics - Rail and wheel roughness measurement related to noise generation

Applications ferroviaires - Acoustique - Mesurage de la  
rugosité des rails et des roues relative à la génération  
du bruit de roulement

Bahnanwendungen - Akustik - Messung der Schienen-  
und Radrauheit im Hinblick auf die Entstehung von  
Rollgeräuschen

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 A1, if approved, will modify the European Standard EN 15610:2019. 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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**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

<b>Contents</b>	<b>Page</b>
European foreword .....	3
<b>1 Modification to Clause 3, Terms and definitions .....</b>	<b>4</b>
<b>2 Modification to Clause 4, Symbols .....</b>	<b>4</b>
<b>3 Modification to 5.1.2, Accuracy of the output signal .....</b>	<b>4</b>
<b>4 Modification to 5.2.2.2, Localized geometric features.....</b>	<b>5</b>
<b>5 Modification to 5.2.6, Acoustic roughness acquisition.....</b>	<b>5</b>
<b>6 Addition of a new 5.2.7, Data quality checks.....</b>	<b>5</b>
<b>7 Modification to 6.1.2, Accuracy of the output signal .....</b>	<b>5</b>
<b>8 Modification to 6.2.4, Acoustic roughness acquisition.....</b>	<b>5</b>
<b>9 Addition of a new Clause 7, Wheel roughness measurements for the assessment of acoustic performance of brake blocks .....</b>	<b>6</b>
<b>10 Addition of a new 8.3 (to the formerly Clause 7 that has been renumbered Clause 8), Assessment of acoustic performance of brake blocks.....</b>	<b>8</b>
<b>11 Modification of Clause 8, Presentation of the rail and wheel roughness spectra.....</b>	<b>9</b>
<b>12 Modification of Clause 9, Report.....</b>	<b>9</b>
<b>13 Modification of Annex A, Examples of geometrical features on the rail .....</b>	<b>10</b>
<b>14 Modification of Annex D, Quantification of measurement uncertainties according to ISO/IEC Guide 98-3.....</b>	<b>11</b>
<b>15 Addition of a new informative Annex F, Specific intervals during the brake performance test program .....</b>	<b>12</b>
<b>16 Modification of the Bibliography .....</b>	<b>12</b>

## European foreword

This document (EN 15610:2019/prA1:2024) 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 15610:2019.

EN 15610:2019/prA1:2023 includes the following significant technical changes with respect to EN 15610:2019:

- Addition of new procedure to assess the acoustic performance of brake blocks

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

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[SIST EN 15610:2019/oprA1:2024](https://standards.iteh.ai/catalog/standards/sist/f672e6fd-8f7a-4bc0-902a-7df43c3428bf/sist-en-15610-2019-opra1-2024)

<https://standards.iteh.ai/catalog/standards/sist/f672e6fd-8f7a-4bc0-902a-7df43c3428bf/sist-en-15610-2019-opra1-2024>

**EN 15610:2019/prA1:2024(E)****1 Modification to Clause 3, Terms and definitions**

Add the following definition as 3.15

**3.15****brake block assessment indicator**

$I_{cbb}$

the single value indicator describes the acoustic performance of brake blocks

**2 Modification to Clause 4, Symbols**

Replace the existing table by the following:

Symbol	Meaning
$C(x)$	circular curve used for the acoustic roughness processing
$d_{ref}$	position, relative to the outer surface of the rail head, of the longitudinal axis of symmetry of the reference surface
$h$	height of a spike
$I_{cbb}$	Single value indicator for acoustic brake block assessment
$L_{h,weighted}$	Measured weighted transfer function [36]
$L_r$	acoustic roughness level
$L_{r,comb,weighted}$	Weighted transfer function added to the energetic sum of the rail and wheel roughness
$L_{r,ref,rail}$	Measured rail roughness used as reference for the calculations [36]
$L_{r,wheel}$	Wheel roughness spectrum in one-third octave band wavelength, determined for the assessment of brake blocks
$r(x)$	acoustic roughness
$\tilde{r}(\lambda)$	discrete Fourier Transform of $r(x)$
$r'(x)$	acoustic roughness processed with the spike removal and curvature algorithm
$W$	width of a spike
$W_{ref}$	width of the reference surface
$X$	variable of the distance along the rail
$X_i$	particular position along the rail
$Z$	mean value of height over a given interval
$\Lambda$	Wavelength

**3 Modification to 5.1.2, Accuracy of the output signal**

Add the following paragraph in the end of the subclause

The permissible speed range for carrying out the measurements shall be stated by the manufacturer.