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Railway applications — Acoustics — Measurement of noise emitted by railbound vehicles

*Applications ferroviaires — Acoustique — Mesurage du bruit émis par
les véhicules circulant sur rails*



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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 3095 was prepared by the European Committee for Standardization (CEN) in collaboration with Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Throughout the text of this document, read “...this European Standard...” to mean “...this International Standard...”.

This second edition cancels and replaces the first edition (ISO 3095:1975), which has been technically revised.

For the purposes of this International Standard, the CEN annex regarding fulfilment of European Council Directives has been removed.

Contents

	page
Foreword.....	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Measurement quantities	8
5 Instrumentation	8
6 Test conditions	9
7 Test procedure	12
8 Test report	14
Annex A (normative) Rail roughness measurement specifications	16
Annex B (normative) Additional measurements	22
Annex C (informative) Procedure for determining the rail roughness limit spectrum	25
Annex D (informative) Major influence parameters on track noise including track dynamics	30
Bibliography	31

Foreword

This European Standard (EN ISO 3095:2005) has been prepared by Technical Committee CEN/TC 256 "Railway applications", the secretariat of which is held by DIN, in collaboration with Technical Committee ISO/TC 43 "Acoustics".

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 February 2006, and conflicting national standards shall be withdrawn at the latest by February 2006.

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 essential requirements of EU Directive 96/48.

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

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

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1 Scope

This European Standard specifies the conditions for obtaining reproducible and comparable measurement results of levels and spectra of noise emitted by all kinds of vehicles operating on rails or other types of fixed track, hereinafter conventionally called “train”, except for track maintenance vehicles in operation.

This standard is applicable for:

- type testing;
- periodic monitoring testing.

The results may be used, for example:

- to characterise the noise emitted by these trains;
- to compare the noise emission of various vehicles on a particular track section;
- to collect basic source data for trains.

The test procedures specified in this European Standard are of engineering grade (grade 2, with a precision of ± 2 dB), that is the preferred one for noise declaration purposes, as defined in EN ISO 12001.

The procedures specified for accelerating and decelerating tests are of survey grade.

NOTE 1 Although this standard is for characterising noise emission for vehicles, the wheel-rail rolling noise often contains a significant and sometimes dominant noise contribution from the track.

NOTE 2 This Standard aims to specify the conditions for obtaining reproducible and comparable measurement results of noise emitted by railbound vehicles and the method described may also be used to monitor the noise emissions in ordinary traffic. In the latter case it is not necessary that track and vehicle conditions fulfil the requirements described in the standard. Therefore the results of such tests are only representative of a “particular” situation.

2 Normative references

The following referenced documents are indispensable for the application 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 60942, *Electroacoustics — Sound calibrators* (IEC 60942:2003)

EN 61260, *Electroacoustics — Octave-band and fractional-octave-band filters* (IEC 61260:1995)

EN 61672-1, *Electroacoustics — Sound level meters — Part 1: Specifications* (IEC 61672-1:2002)

EN 61672-2, *Electroacoustics — Sound level meters — Part 2: Pattern evaluation tests* (IEC 61672-2:2003)

EN ISO 266, *Acoustics — Preferred frequencies* (ISO 266:1997)

3 Terms and definitions

NOTE Definitions from 3.7 to 3.14 apply to values measured either as a frequency spectrum or in a particular frequency band of centre f (expressed in Hz).