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Road traffic noise reducing devices - Procedures for assessing long term performance

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 14389:2023 sisaldab Euroopa standardi EN 14389:2023 ingliskeelset teksti.	This Estonian standard EVS-EN 14389:2023 consists of the English text of the European standard EN 14389:2023.
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 13.09.2023.	Date of Availability of the European standard is 13.09.2023.
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.

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EUROPEAN STANDARD

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English Version

Road traffic noise reducing devices - Procedures for assessing long term performance

Dispositifs de réduction du bruit du trafic routier - Méthodes d'évaluation des performances à long terme

Lärmschutzvorrichtungen an Straßen - Verfahren zur Bewertung der Langzeitwirksamkeit

This European Standard was approved by CEN on 28 May 2023.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists 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.

CEN members are the national standards bodies of 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 United Kingdom.

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

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European foreword

This document (EN 14389:2023) has been prepared by Technical Committee CEN/TC 226 “Road equipment”, the secretariat of which is held by AFNOR.

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 March 2024, and conflicting national standards shall be withdrawn at the latest by March 2024.

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 14389-1:2015 and EN 14389-2:2015.

The main change compared to the previous edition is the inclusion of the method for assessing long term performance regarding “non-acoustic” characteristics.

This document is intended to be read in conjunction with:

— EN 14388, *Road traffic noise reducing devices — Characteristics*;

— EN 1793, *Road traffic noise reducing devices — Test method for determining the acoustic performance:*

  — *Part 1: Intrinsic characteristics — Sound absorption under diffuse sound field conditions*;

  — *Part 2: Intrinsic characteristics — Airborne sound insulation under diffuse sound field conditions*;

  — *Part 5: Intrinsic characteristics — Sound absorption under direct sound field conditions*;

  — *Part 6: Intrinsic characteristics — Airborne sound insulation under direct sound field conditions*;

— EN 1794, *Road traffic noise reducing devices — Non-acoustic performance:*

  — *Part 1: Methods of determination of the mechanical and stability characteristics*;

  — *Part 2: Methods of determination of the general safety and environmental characteristics*;

— prEN 17383, *Road traffic noise reducing devices — Sustainability: Key Performance Indicators (KPIs) Declaration*.

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.

Introduction

Road traffic noise reducing devices alongside roads are expected to maintain their characteristics during the declared working life.

Resistance to electrolytic or/and chemical corrosion and embrittlement, dimensional stability and ageing resistance are considered by the manufacturer for different environmental conditions.

A change of acoustic characteristics can be foreseen depending on the material used and the environmental exposure conditions. Significant deterioration of the acoustic characteristics is avoided when appropriate materials for the roadside environment are used and manufacturer's recommendations for installation and maintenance are respected.

1 Scope

This document specifies a method for evaluating the working life of noise reducing devices used alongside roads according to the relevant exposure conditions.

It also specifies a method for determining the acoustic characteristic at the end of the working life.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions 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
road traffic noise reducing device
RTNRD
device that is designed to reduce the propagation of traffic noise away from the road environment

Note 1 to entry: The RTNRD can comprise acoustic elements (3.2) only, or both structural (3.3) and acoustic elements.

Note 2 to entry: Applications of RTNRDs include noise barriers (3.4), claddings (3.5), covers (3.6) and added devices (3.7).

3.2
acoustic element
element whose primary function is to provide the acoustic characteristic of the device

3.3
structural element
element whose primary function is to support or hold in place acoustic elements

3.4
noise barrier
RTNRD which obstructs the direct transmission of airborne sound emanating from road traffic

3.5
cladding
RTNRD which is attached to a wall or other structure and reduces the amount of sound reflected off the structure

3.6
cover
RTNRD which either spans or overhangs the road