Road traffic noise reducing devices - Procedures for assessing long term performance - Part 1: Acoustical characteristics

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NATIONAL FOREWORD

See Eesti standard EVS-EN 14389-1:2015 sisaldab Euroopa standardi EN 14389-1:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 14389-1:2015 consists of the English text of the European standard EN 14389-1:2015.
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.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 06.05.2015.	Date of Availability of the European standard is 06.05.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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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English Version

Road traffic noise reducing devices - Procedures for assessing long term performance - Part 1: Acoustical characteristics

Dispositifs de réduction du bruit du trafic routier - Méthodes d'évaluation des performances à long terme - Partie 1: Caractéristiques acoustiques

Lärmschutzvorrichtungen an Straßen - Verfahren zur Bewertung der Langzeitwirksamkeit - Teil 1: Akustische Eigenschaften

This European Standard was approved by CEN on 16 April 2015.

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Foreword

This document (EN 14389-1:2015) 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of an identical text or by endorsement, at the latest by November 2015, and conflicting national standards shall be withdrawn at the latest by November 2015.

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 supersedes EN 14389-1:2007.

The main change compared to the previous edition is a new presentation of the requirements in order to be coherent with the new EN 14389-2. In the new version, the manufacturer has to declare in Table 1 the working life of the acoustic performance as a function of environmental class.

This part is concerned with long-term durability. It should be read in conjunction with:

EN 1793, *Road traffic noise reducing devices – Test method for determining the acoustical performance,*

— *Part 1: Intrinsic characteristics of sound absorption*

— *Part 2: Intrinsic characteristics of airborne sound insulation under diffuse sound field conditions*

— *Part 6: Intrinsic characteristics – In situ values of airborne sound insulation under direct sound field conditions*

CEN/TS 1793-5, *Road traffic noise reducing devices – Test method for determining the acoustical performance,*

— *Part 5: Intrinsic characteristics – In situ values of sound reflection and airborne sound insulation*

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

— *Part 1: Mechanical performance and stability requirements*

— *Part 2: General safety and environmental requirements*

— *Part 3: Reaction to fire. Burning behaviour of noise reducing devices based on assessment of their components*

EN 14389, R*oad traffic noise reducing devices - Procedures for assessing long-term performance,*

— *Part 2: Non-acoustical characteristics*

EN 60721-3-4, *Classification of environmental conditions,*

— *Part 3: Classification of groups of environmental parameters and their severities – Section 4: Stationary use at non-weather protected locations*

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

Noise Reducing Devices alongside roads should not only fulfil their acoustic function and structural design requirements in accordance with appropriate documents, but also maintain their performance during the required working life. The acoustic elements have to resist the actions of agents within the roadside environment that could significantly degrade their performance.

The acoustic characteristics of a Road Traffic Noise Reducing Device can deteriorate significantly over the duration of its working life if it is not installed or maintained in accordance with the manufacturer's recommendations, or if the materials are not appropriate for the roadside environment.

All elements in the construction of noise reducing devices should be resistant to electrolytic or/and chemical corrosion and embrittlement, be dimensionally stable and have generally a high ageing resistance in many differing conditions.

1 Scope

This European Standard specifies requirements for assessing the working life and provides the relevant exposure conditions.

Standards of construction and any material tests conducted should provide evidence of resistance to specified conditions selected from the following:

I.	Chemical Agents	Location dependent
II.	De-icing salt	Location/climate dependent
III.	Dirty water/dust	Location/climate dependent
IV.	Dew	Climate dependent
V.	Freeze/thaw	Climate dependent
VI.	Cold	Climate dependent
VII.	Heat	Climate dependent
VIII.	UV Radiation	Climate dependent
IX.	Traffic Vibration	Location dependent
X.	Biological Process	Climate dependent
XI.	Ozone	Location dependent
XII.	Water	Climate dependent
XIII.	Water spray (Wet/dry)	Location dependent

NOTE Special care is taken for combinations of different materials, whether inside a single device or in combination with other devices (for example: a combination of different acoustic elements or another combination of acoustic and structural elements)

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 60721-3-4, *Classification of environmental conditions — Part 3: Classification of groups of environmental parameters and their severities — Section 4: Stationary use at non-weatherprotected locations (IEC 60721-3-4)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
noise reducing device (NRD)
device that is designed to reduce the propagation of traffic noise away from the road environment

Note 1 to entry: This may be a noise barrier, cladding, a road cover or an added device. These devices may include both acoustic and structural elements.