



# SLOVENSKI STANDARD

## SIST EN 14389-2:2005

01-januar-2005

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Določila za določanje dolgotrajne učinkovitosti zmanjševalnikov hrupa na cestah - Postopki za ocenjevanje dolgotrajne učinkovitosti zmanjševalnikov hrupa na cestah - Del 2: Neakustične lastnosti

Road traffic noise reducing devices - Procedures for assessing long term performance - Part 2: Non-acoustical characteristics

Lärmschutzeinrichtungen an Straßen - Verfahren zur Bewertung der Langzeitwirksamkeit - Teil 2: Nichtakustische Eigenschaften

Dispositifs de réduction du bruit du trafic routier - Méthodes d'évaluation des performances a long terme - Partie 2 : Caractéristiques non acoustiques

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Ta slovenski standard je istoveten z: EN 14389-2:2004

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### ICS:

17.140.30	Emisija hrupa transportnih sredstev	Noise emitted by means of transport
93.080.30	Cestna oprema in pomožne naprave	Road equipment and installations

**SIST EN 14389-2:2005**

**en**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 14389-2**

August 2004

ICS 93.080.30

English version

## Road traffic noise reducing devices - Procedures for assessing long term performance - Part 2: Non-acoustical characteristics

Dispositifs de réduction du bruit du trafic routier - Méthodes d'évaluation des performances à long terme - Partie 2 : Caractéristiques non acoustiques

Lärmschutzeinrichtungen an Straßen - Verfahren zur Bewertung der Langzeitwirksamkeit - Teil 2: Nichtakustische Eigenschaften

This European Standard was approved by CEN on 24 June 2004.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of 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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## Foreword

This document (EN 14389-2:2004) 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 February 2005, and conflicting national standards shall be withdrawn at the latest by February 2005.

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*

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

*Part 1: Mechanical performance and stability requirements*

*Part 2: General safety and environmental requirements*

prEN 14389, *Road traffic noise reducing devices - Procedures for assessing long-term performance*

*Part 1: 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-weatherprotected locations (IEC 60721-3-4:1995)*

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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## 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 structural elements need to retain acceptable minimum safety factors at the end of their design life and the acoustic elements not only have to remain effective structurally but provide the specified acoustic performance.

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

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## 1 Scope

This document specifies assumed working life requirements and is also intended to assist suppliers in its prediction.

It is to be used only for devices manufactured from materials covered by documents which allow prediction of working life (see Annex B). Materials excepted are those which do not affect the non acoustic performance of the device required by EN 1794 parts 1 and 2.

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

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**EN 14389-2:2004 (E)****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 1794-1, *Road traffic noise reducing devices – Non-acoustic performance – Part 1: Mechanical performance and stability requirements*

EN 1794-2, *Road traffic noise reducing devices – Non-acoustic performance – Part 2: General safety and environmental requirements.*

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 60721-3-4:1995).*

**3 Terms and definitions**

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

**3.1 structural elements**

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

**3.2 acoustic elements**

elements whose primary function is to provide the acoustic performance of the device

**3.3 working life**

period of time during which the performance of the device will be maintained which enables it to fulfil the performance characteristics as identified in EN 1794 parts 1 and 2

**3.4 roadside exposure**

use of the product as a noise reducing device installed alongside a road

**4 Requirements****4.1 General**

The structural design shall comply with the requirements of the appropriate European code.

When assessed against the environmental conditions listed in Annex A of this document, the product shall satisfy the normative parts of road traffic noise reducing devices - non acoustic performance EN 1794 parts 1 and 2.

**4.2 Structural elements**

All structural elements shall normally be designed to give a working life of 30 years under specific conditions, however, a longer or shorter life may be specified.



### 4.3 Acoustic elements

Owing to the difficulty of assessing their long-term acoustic performance, acoustic elements including seals at edges to prevent sound leakage are not necessarily required to have the same working life as the structural elements.

Acoustic elements shall therefore be designed to have a normal working life of 15 years under the same conditions imposed for structural elements. However, a longer or shorter life may be specified.

### 4.4 General

When subjected to environmental conditions and severities selected from EN 60721-3-4, all material used in the construction of the device shall be assessed using the durability requirements of the appropriate material standard. Some material documents, in order to predict working life, may require more detailed information of exposure conditions than those given in EN 60721-3-4.

Standard environmental categories selected for road traffic noise reducing devices with possible variations are given in Annex A of this document.

Adverse effects on long-term performance of contact with the ground shall be taken into account.

If retention of water within acoustic elements is likely to degrade their performance the design shall ensure that water is not retained.

If a change in humidity and/or temperature and/or UV affects the dimensional stability of materials used in the construction, then the design shall allow for such changes and ensure that the performance continues to fulfil the performance characteristics.

Where different metals or materials are used in the construction, all appropriate measures shall be taken to avoid electrolytic corrosion or interaction that could adversely affect working life.

Upon request the supplier shall provide for both structural and acoustic elements.

- a) the intended working life;
- b) the classification of conditions used for evaluation based on EN 60721-3-4;
- c) A statement of the design codes used, appropriate Eurocodes etc., and evidence of evaluation of working life;
- d) In all cases details of any maintenance programme, if this is needed to ensure required working life is attained. Should this involve high pressure water jetting, evidence shall be provided that the product can withstand 20 MPa water jet for 10 seconds on all its faces and for all angles at a distance of 150 mm.

### 4.5 Report

The report shall include a full description of the geometry of the product evaluated, including details of procedures required by all appropriate material documents.

It shall also include:

- a) reference to this document;
- b) name and address of the approved independent evaluating body with a dated signature of the person responsible;
- c) exact identification of evaluated product, name and address of the manufacturer;
- d) full description of the materials, their thickness' and densities of sound absorptive elements;
- e) drawing showing the cross-section of the evaluated element with permitted manufacturing tolerances;