SLOVENSKI STANDARD

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Protihrupne ovire za cestni promet – Specifikacije

Road traffic noise reducing devices - Specifications

Lärmschutzeinrichtungen an Straßen - Vorschriften

Dispositifs de réduction du bruit du trafic routier - Spécifications

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93.080.30

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English version

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This European Standard was approved by CEN on 19 May 2005.

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.

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

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Contents

Foreword

This European Standard (EN 14388:2005) 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of an identical text or by endorsement, at the latest by January 2006, and conflicting national standards shall be withdrawn at the latest by March 2007.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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.

1 Scope

This document specifies the performance requirements and methods of evaluation for road traffic noise reducing devices. This document covers acoustic, non-acoustic and long term performance, but not aspects such as resistance to vandalism or requirements of visual appearance.

This document covers products used for road traffic noise reduction made from any materials. This document does not cover road surfaces or the airborne sound insulation of houses.

This document does not cover material specific characteristics necessary to meet the performance requirements of the standard. If existing, material specific standards should also apply in accordance with the specifications prescribed hereafter.

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 1793-1:1997, *Road traffic noise reducing devices — Test method for determining the acoustic performance — Part 1: Intrinsic characteristics of sound absorption*

EN 1793-2:1997, *Road traffic noise reducing devices — Test method for determining the acoustic performance — Part 2: Intrinsic characteristics of airborne sound insulation*

CEN/TS 1793-4, *Road traffic noise reducing devices — Test method for determining the acoustic performance — Part 4: Intrinsic characteristics — In situ values of sound diffraction*

EN 1794-1:2003, *Road traffic noise reducing devices — Non-acoustic performance — Part 1: Mechanical performance and stability requirements*

EN 1794-2:2003, *Road traffic noise reducing devices — Non-acoustic performance — Part 2: General safety and environmental requirements*

prEN 14389-1, *Road traffic noise reducing devices — Procedures for assessing long term performance — Part 1 — Acoustical characteristics*

EN 14389-2:2004, *Road traffic noise reducing devices — Procedures for assessing long term performance — Non-acoustic characteristics*

EN ISO 9001:2000, *Quality managements systems — Requirements (ISO 9001:2000)*

3 Terms and definitions

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

3.1
noise barrier
noise reducing device, which obstructs the direct transmission of airborne sound emanating from road traffic

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

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

3.4
cladding
noise-reducing device, which is attached to a wall or other structure and reduces the amount of sound reflected

3.5
cover
noise-reducing device, which either spans or overhangs the highway

3.6
added device
added component that influences the acoustic performance of the original noise-reducing device (acting primarily on the diffracted energy)

NOTE Noise barriers, cladding and covers may include both acoustic and structural elements.

4 Quantities and units

Quantities and units referred to in this document shall be as defined in the corresponding supporting standards cross-referenced in Table 1.

5 Characteristics

5.1 Evaluation of performance

Evaluation of performance shall be carried out according to Table 1 for each for all types of noise reducing devices. In order to take into account existing regulations on products where performance(s) for one or more characteristics may not be required, due to the characteristic(s) for a given intended use that is/are not subject to regulation in the Member State(s) where the product is placed on the market, the NPD-option can always be used by manufacturers.

NOTE See Annex ZA for explanation of NPD.

5.2 Dangerous substances

Materials used in products shall not release any dangerous substances in excess of the maximum permitted levels specified in a relevant European Standard for the material or permitted in the national regulations of the member state of destination. The requirements of EN 1794-2:2003, Annex C shall apply in conjunction with the requirements of this clause.

Table 1 — Characteristics relevant to different noise reducing devices

Characteristic And relevant supporting standard	Noise barrier	Cladding	Cover	Structural element *(if tested separately)*	Added device ++
Sound absorption EN 1793-1	E_1	▲	E_1	-	-
Airborne sound insulation EN 1793-2	▲	-	▲	-	-
Wind and static Loading EN 1794-1:2003, Annex A	▲	▲	▲	▲	▲
Self weight EN 1794-1:2003, Annex B	▲	▲	▲	▲	▲
Impact of stones EN 1794-1:2003, Annex C	▲	▲	▲	O	▲
Safety in collision (vehicle occupant safety) EN 1794-1:2003, Annex D	O	O	-	O	O
Safety in collision (combined safety and noise barrier) EN 1794-1:2003, Annex D	E_2	E_3	-	-	E_3
Dynamic load from snow clearance EN 1794-1:2003, Annex E	▲	▲	-	▲	▲
Resistance to brush fire EN 1794-2:2003, Annex A	▲	▲	▲	▲	▲
Danger of falling debris EN 1794-2:2003, Annex B	▲	▲	▲	▲	▲
Environmental protection EN 1794-2:2003, Annex C	▲	▲	▲	▲	▲
Means of escape EN 1794-2:2003, Annex D	▲	▲	▲	-	-
Light reflection EN 1794-2:2003, Annex E	▲	▲	▲	▲	▲
Transparency EN 1794-2:2003, Annex F	O	-	O	-	O
Diffraction index improvement CEN/TS 1793-4	-	-	-	-	▲

- : not applicable.

▲ : for this characteristic, it is necessary to report the value, or the class, or the fact that no performance is declared.

O : optional.

++ : added device shall be evaluated in combination with the supporting Noise Reducing Device according to its intended use.

E_1 : only applicable if the device is described as sound absorptive.

E_2 : only applicable if classified as a combined safety and noise barrier as defined in EN 1794-1:2003, 4.4 (otherwise optional).

E_3 : only applicable if fixed on combined safety and noise barrier as defined in EN 1794-1:2003, 4.4 (otherwise optional).

5.3 Requirements

The manufacturer shall provide the results of tests and/or calculations of the characteristics, in accordance with the appropriate supporting standard listed in Table 2.

The performance shall not be less than the performance stated in material specific European Standards where they exist.

NOTE Although some are already complete, European Standards are under preparation for materials affecting the performance of road traffic noise reducing devices.