



BSI Standards Publication

Road traffic noise reducing devices – Non-acoustic performance

Part 2: General safety and environmental requirements

National foreword

This British Standard is the UK implementation of [EN 1794-2:2020](#). It supersedes [BS EN 1794-2:2011](#), which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/509/6, Fences for the attenuation of noise.

A list of organizations represented on this committee can be obtained on request to its secretary.

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English Version

Road traffic noise reducing devices - Non-acoustic
performance - Part 2: General safety and environmental
requirements

Dispositifs de réduction du bruit du trafic routier -
Performances non acoustiques - Partie 2 : Exigences
générales pour la sécurité et l'environnement

Lärmschutzvorrichtungen an Straßen -
Nichtakustische Eigenschaften - Teil 2: Allgemeine
Sicherheits- und Umweltaanforderungen

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European foreword

This document ([EN 1794-2:2020](#)) 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of an identical text or by endorsement, at the latest by November 2020, and conflicting national standards shall be withdrawn at the latest by November 2020.

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 1794-2:2011](#).

This series consists of the following parts under the general title “*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 and classification*

The main change compared to the previous edition is:

- the suppression of the [Annex A](#), resistance to brushwood fire moved into [EN 1794-3](#).

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, Turkey and the United Kingdom.

Introduction

While performing their primary function, road traffic noise reducing devices should not pose hazards to road users or other people in the vicinity or to the environment at large. Noise reducing devices should not reflect light in such a way as to prejudice road safety. They should be made from materials which do not emit noxious fumes or leachates as the result of natural or industrial processes, or as the result of fire. Noise reducing devices should allow a means of escape by road users and access by operatives in the event of an emergency or for maintenance.

1 Scope

This document specifies methods and criteria for assessing the general safety and environmental performance of road traffic noise reducing devices under typical roadside conditions. Appropriate test methods are provided where these are necessary. The treatment of each topic is covered separately in [Annexes A](#) to [E](#).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1794-1:2018](#), *Road traffic noise reducing devices — Non-acoustic performance — Part 1: Mechanical performance and stability requirements*

[EN ISO 2813](#), *Paints and varnishes — Determination of gloss value at 20°, 60° and 85° (ISO 2813)*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

noise reducing device

NRD

system designed to reduce the propagation of traffic noise away from the road environment

Note 1 to entry: The NRD comprises acoustic elements only or both structural and acoustic elements.

Note 2 to entry: applications of NRD include noise barriers, claddings, covers and added devices.

3.2

noise barrier

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

3.3

acoustic element

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

3.4

structural element

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

3.5

cladding

noise reducing device which is attached to a wall or other structure to reduce the amount of sound reflected

3.6

cover

noise reducing device which either spans or overhangs the road

3.7

added device

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

4 Symbols

ϕ_m	angle at which reflections from the surface of the transparent material obscure the view through the material, in degrees;
ϕ_0	angle between the visual axis and the normal to the noise reducing device (see Figure E.2), in degrees;
θ	angle of incidence
α_n	angle of transparency (see Figure E.2), in degrees;
α	angle (see Figure A.1)
β_n	angle of opacity (see Figure E.2), in degrees;
η	angle of the transparent Elements
μ	terms of refractive index
t_θ	function of the angle of incidence
K_A	visual acuity factor (see Figure E.3), in degrees;
k	Parameter
L_T	light transmission index (as determined in accordance with EN 410 or EN 2155-5), in percent;
L_T'	overall transparency for different material thickness t'
$L_T/100$	coefficient
r	radius (see Figure A.1)
S_0	area of opaque features within transparent elements, in square millimetres;
S_T	total area of transparent elements, including horizontal features, in square millimetres;
t/t'	material thickness/ different material thickness
T	transparency, in percent;
T_r	transparency looking right, in percent;
T_l	transparency looking left, in percent;
T_D	dynamic transparency, in percent;
T_S	static transparency, in percent.
u_i	estimated uncertainties
u_T	sum of the estimated combined uncertainties
u_T^2	the square of the uncertainty in T

w_i weights

5 Requirements

5.1 Secondary safety (falling debris)

When secondary safety has to be assessed, this shall be done in accordance with [Annex A](#).

5.2 Environmental protection

The constituent materials and their breakdown products shall be identified in accordance with [Annex B](#).

5.3 Means of escape in emergency

The acoustic and mechanical performances of doors or other means of escape shall be assessed in accordance with [Annex C](#).

5.4 Reflection of light

The results of a standard test of reflectivity shall be assessed in accordance with [Annex D](#).

5.5 Transparency

The results of a standard test of transparency should be assessed in accordance with [Annex E](#).

6 Test report

6.1 Every test report on aspects of performance shall include the following information:

- a) number and year of this European Standard;
- b) full description of the element or system tested, including manufacturer(s), part numbers, place and date of origin;
- c) description of the method of sampling, if parts of manufactured elements are evaluated by testing;
- d) place and date of assessment, and the name of the assessor;
- e) sufficient description of any tests carried out, any results measured and the conclusions drawn about the product together with any illustrations or photographs, all as specified in the appropriate annex.

6.2 A summary report shall be produced, identifying the aspects of performance for which detailed reports are available and the level of performance assessed, where appropriate.