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Acoustics - Noise from shooting ranges - Part 2: Calculation of muzzle blast (ISO 17201-2:2025)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 11/25

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EUROPÄISCHE NORM

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Supersedes EN ISO 17201-2:2006

English Version

**Acoustics - Noise from shooting ranges - Part 2:
Calculation of muzzle blast (ISO 17201-2:2025)**Acoustique - Bruit des stands de tir - Partie 2: Calcul de
la détonation à la bouche (ISO 17201-2:2025)Akustik - Geräusche von Schießplätzen - Teil 2:
Berechnung des Mündungsknalls (ISO 17201-2:2025)

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EN ISO 17201-2:2025 (E)

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European foreword

This document (EN ISO 17201-2:2025) has been prepared by Technical Committee ISO/TC 43 "Acoustics " in collaboration with Technical Committee CEN/TC 211 "Acoustics" the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by January 2026, and conflicting national standards shall be withdrawn at the latest by January 2026.

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 ISO 17201-2:2006.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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Endorsement notice

The text of ISO 17201-2:2025 has been approved by CEN as EN ISO 17201-2:2025 without any modification.



International Standard

ISO 17201-2

Acoustics — Noise from shooting ranges —

Part 2: Calculation of muzzle blast

Acoustique — Bruit des stands de tir —

Partie 2: Calcul de la détonation à la bouche

**Second edition
2025-07**

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ISO 17201-2:2025(en)**Foreword**

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 211, *Acoustics*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

This second edition cancels and replaces the first edition (ISO 17201-2:2006), which has been technically revised.

The main changes are as follows:

- deletion of former Clauses 5 and 6, and Annex D which were moved to ISO 17201-4;
- revision of former Clause 7 (now [Clause 5](#)) and [Annex C](#);
- addition of a new [Clause 6](#);
- editorial revision of the document.

A list of all parts in the ISO 17201 series can be found on the ISO website.

The initiative to prepare a standard on impulse noise from shooting ranges was taken by AFEMS, the Association of European Manufacturers of Sporting Ammunition, in April 1996, by the submission of a formal proposal to CEN. After consultation in CEN in 1998, CEN/TC 211, *Acoustics*, asked ISO/TC 43/SC 1, *Noise*, to prepare the ISO 17201 series.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

ISO 17201-2:2025(en)**Introduction**

There are two basic sources that dominate the shooting sound from firearms: the muzzle blast and the projectile sound. These two sources are basically different. The explosion blast from devices can be treated as muzzle blast. This document describes the calculation of muzzle blast. The calculation of projectile sound is described in ISO 17201-4.

The muzzle blast is caused by the expanding gases of the propellant at the muzzle. The muzzle blast can be modelled approximately based on a spherical volume of these gases at the moment when the expansion speed becomes subsonic.

In general, the procedures for estimating the muzzle blast rely on the estimation of energies that are involved in the related processes. The procedures give estimates for the fraction of these energies that transforms into acoustic energy. The results of the estimation are acoustical source data with respect to energy, direction and frequency content.

Acoustics — Noise from shooting ranges —

Part 2: Calculation of muzzle blast

1 Scope

This document specifies a computational method (in line with ISO 17201-4) for estimating the acoustic source data of muzzle blast and explosions on the basis of non-acoustic data for firearms with calibres less than 20 mm and explosions less than 50 g TNT equivalent.

This document addresses those cases where no source measurements exist. This document can also be used as an interpolation method between measurements of muzzle blast.

Source data are given in terms of spectral angular source energy covering the frequency range from 12,5 Hz to 10 kHz and can be used as data input for sound propagation calculation.

This document does not apply to the prediction of sound levels for the assessment of hearing damage; nor can it be used to predict sound pressure levels or sound exposure levels at distances where linear acoustics do not apply.

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.

ISO 17201-1, *Acoustics — Noise from shooting ranges — Part 1: Determination of muzzle blast by measurement*

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