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Standards

Irish Standard
I.S. EN ISO 17201-1:2005

Acoustics - Noise from shooting ranges - Part 1: Determination of muzzle blast by measurement (ISO 17201-1:2005)

I.S. EN ISO 17201-1:2005

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Acoustics - Noise from shooting ranges - Part 1: Determination of muzzle
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Acoustique - Bruit des stands de tir - Partie
1: Mesurage de l'énergie sonore en sortie
de bouche (ISO 17201-1:2005/Cor 1:2009)

Akustik - Geräusche von Schießplätzen -
Teil 1: Bestimmung des Mündungsknalls
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Ce corrigendum prendra effet le 13 mai 2009 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 13.Mai 2009 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.



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Endorsement notice

The text of ISO 17201-1:2005/Cor.1:2009 has been approved by CEN as a European Corrigendum without any modification.



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN ISO 17201-1:2005

ICS 95.020
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**ACOUSTICS - NOISE FROM SHOOTING
RANGES - PART 1: DETERMINATION OF
MUZZLE BLAST BY MEASUREMENT (ISO
17201-1:2005)**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

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English Version

**Acoustics - Noise from shooting ranges - Part 1: Determination
of muzzle blast by measurement (ISO 17201-1:2005)**

Acoustique - Bruit des stands de tir - Partie 1: Mesurage de
l'énergie sonore en sortie de bouche (ISO 17201-1:2005)

Akustik - Geräusche von Schießplätzen - Teil 1:
Bestimmung des Mündungsknalls durch Messung (ISO
17201-1:2005)

This European Standard was approved by CEN on 31 July 2005.

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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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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

EN ISO 17201-1:2005 (E)

Foreword

This document (EN ISO 17201-1:2005) 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 DS.

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 2006, and conflicting national standards shall be withdrawn at the latest by February 2006.

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.

Endorsement notice

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INTERNATIONAL STANDARD

ISO
17201-1

First edition
2005-08-01

Acoustics — Noise from shooting ranges —

Part 1: Determination of muzzle blast by measurement

Acoustique — Bruit des stands de tir —

Partie 1: Mesurage de l'énergie sonore en sortie de bouche



Reference number
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ISO 17201-1:2005(E)

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17201-1 was prepared by Technical Committee ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise*.

ISO 17201 consists of the following parts, under the general title *Acoustics — Noise from shooting ranges*:

- *Part 1: Determination of muzzle blast by measurement*
- *Part 2: Estimation of muzzle blast and projectile sound by calculation*
- *Part 4: Prediction of projectile sound*

The following parts are under preparation:

- *Part 3: Guidelines for sound propagation calculation*
- *Part 5: Noise management*

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.

Introduction

To obtain reliable data for the prediction of shooting sound levels at a reception point, the energy of sound emission produced by the muzzle blast is needed. The muzzle blast is produced by the propellant gas expelled from the barrel of a weapon; in most cases the gas has a supersonic fluid speed. Close to the muzzle, the sound pressure is very high and cannot be described with linear acoustics. For the purposes of this part of ISO 17201, the non-linear region is defined by the observation of a peak sound pressure level of 154 dB or more. This part of ISO 17201 defines how the sound source energy and directivity of the muzzle blast can be obtained from the measurement of sound exposure levels and how these measurements are to be carried out. The source energy, its directivity and spectral structure may be used as input for sound propagation models for environmental noise assessment. This cannot be used for calculations of sound exposure levels close to the weapon, for instance to estimate injury to people or animals.

Acoustics — Noise from shooting ranges —

Part 1: Determination of muzzle blast by measurement

1 Scope

This part of ISO 17201 specifies a method to determine the acoustic source energy of the muzzle blast for calibres of less than 20 mm or explosive charges of less than 50 g TNT equivalent. It is applicable at distances where peak pressures less than 1 kPa (equivalent to a peak sound pressure level of 154 dB) are observed. The source energy, directivity of the source and their spectral structure determined by this procedure can be used as input data to sound propagation programmes, enabling prediction of shooting noise in the neighbourhood of shooting ranges. Additionally, the data can be used to compare sound emission from different types of guns or different types of ammunition used with the same gun.

This part of ISO 17201 is applicable to guns used in civil shooting ranges but it can also be applied to military guns. It is not applicable to the assessment of hearing damage or sound levels in the non-linear region.

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.

ISO 9613-1, *Acoustics — Attenuation of sound during propagation outdoors — Part 1: Calculation of the absorption of sound by the atmosphere*

IEC 60942:2003, *Electroacoustics — Sound calibrators*

IEC 61672-1:2002, *Electroacoustics — Sound level meters — Part 1: Specifications* ¹⁾

3 Terms and definitions

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

3.1

instantaneous sound pressure

p

total instantaneous pressure at a point, in the presence of a sound wave, minus the atmospheric pressure at that point

NOTE The instantaneous sound pressure is expressed in pascals.

1) Amalgamated revision of IEC 60651 and IEC 60804.

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