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**Acoustics — Noise from shooting  
ranges —**

**Part 5:  
Noise management**

*Acoustique — Bruit des stands de tir —  
Partie 5: Gestion du bruit*



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## Contents

Page

Foreword .....	iv
Introduction.....	v
1     Scope.....	1
2     Normative references .....	1
3     Terms and definitions .....	2
4     Management process.....	7
5     Management documentation.....	11
6     Uncertainties.....	12
Annex A (informative) Examples .....	13
Annex B (informative) Classification of muzzle blast (emission) .....	22
Bibliography.....	25

## 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 17201-5 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 3: Guidelines for sound propagation calculations*
- *Part 4: Prediction of projectile sound*
- *Part 5: Noise management*

## Introduction

The initiative to prepare a standard on impulse noise from shooting ranges was taken by the Association of European Manufacturers of Sporting Ammunition (AFEMS), in April 1996 by the submission of a formal proposal to CEN (see doc. CEN N 1085). After consultation in CEN in 1998, CEN/TC 211, *Acoustics*, asked ISO/TC 43, *Acoustics*, Subcommittee SC 1, *Noise* to prepare ISO 17201 (all parts).

This part of ISO 17201 provides guidance for noise management of shooting activity at shooting ranges. It deals with the control of the noise received outside shooting ranges at specified reception points based either on measured or calculated data.

In general, national or regional environmental authorities specify how sound from shooting ranges should comply with guidelines, rules or regulations made by the relevant authorities. In situations with no official regulations, the management of a shooting range may use the method specified in this part of ISO 17201.

**NOTE** Conflicting national guidelines, rules or regulations can prevent the application of methods described in this part of ISO 17201.

Looking through various regulations used worldwide, many different approaches for noise control are found. In some countries, the long-term equivalent continuous sound pressure level is used to limit sound levels from shooting. In other countries, noise control is managed by limiting the level of one shot or by the difference between the long-term rating level and background sound pressure level, etc. This part of ISO 17201 gives a method for noise management to control the equivalent continuous sound pressure level by managing the number of shots for each combination of weapon type, ammunition type, the locations of firing, and the firing direction that is used in a shooting range. The weighting of the number of shots is related to the sound exposure levels produced by each combination at the reception points. By directly relating the number of shots to the limiting values, management objectives such as minimizing the noise load in the neighbourhood can be met.

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# Acoustics — Noise from shooting ranges —

## Part 5: Noise management

### 1 Scope

This part of ISO 17201 gives guidelines for noise management of shooting activity at shooting ranges. The control of the noise received outside shooting ranges at specified reception points based either on measured or calculated sound exposure levels is specified. This part of ISO 17201 can also be used in the planning of new or reconstruction of existing ranges. It is intended to comply with all relevant local rules and regulations which imply a conversion of sound exposure level to other indicators as given in ISO 17201-3.

This part of ISO 17201 applies to weapons with calibres of less than 20 mm or explosive charges of less than 50 g TNT equivalent and pressures of less than 1 kPa at the reception point.

NOTE National or other regulations, which could be more stringent, can apply.

### 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 1996-2, *Acoustics — Description, measurement and assessment of environmental noise — Part 2: Determination of environmental noise levels*

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

ISO 17201-2, *Acoustics — Noise from shooting ranges — Part 2: Estimation of muzzle blast and projectile sound by calculation*

ISO 17201-3, *Acoustics — Noise from shooting ranges — Part 3: Guidelines for sound propagation calculations*

ISO 17201-4, *Acoustics — Noise from shooting ranges — Part 4: Prediction of projectile sound*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*