ISO 17201-3:2019 (E)

Acoustics — Noise from shooting ranges — Part 3: Sound propagation calculations

Contents

Foreword

Introduction

- 1 Scope
- 2 Normative references
- Terms and definitions 3

Source modelling 4

- General 4.1
- 4.2 Muzzle blast
- 4.2.1 Background
- Free-field situation 4.2.2
- 4.2.3 Non-free-field situation
- Shooting shed 4.2.3.1
- More complex situations 4.2.3.2
- **Projectile sound** 4.3

5 **Propagation calculation**

- 5.1 General
- Application of ISO 9613-2 for free-field situations 5.2
- 5.3 Application of ISO 9613-2 for non-free-field situations
- Sophisticated models 5.4
- 6 Conversion of sound exposure levels
- 7 Uncertainties

Annex A (normative) Benchmark cases for shooting sheds with baffles

- A.1 General
- A.2 Benchmark case
- A.2.1 Model shed
- **Computational method** A.2.2
- Results A.3
- Example of use of the benchmark case A.4
- (informative) Sophisticated modelling approaches Annex B
 - **B.1 Preliminary remarks**
 - **Kirchhoff** approximation **B.2**
 - **B.3 Ray-tracing models**
 - **B.4** Maekawa approximation
- Annex C (informative) Modelling of shooting scenarios - Examples of shooting ranges
 - C.1 **Preliminary remarks**
 - C.2 Free-field ranges
 - C.2.1 **General overview**
 - Free-field shooting range First site Free-field shooting range Second site C.2.2
 - C.2.3
 - Free-field shooting range with barrier C.3
 - Shooting shed C.4
 - C.5 Shooting facility

Annex D (informative) Uncertainty

- D.1 Preliminary remarks
- Prediction of uncertainty Functional relationship Contributions to prediction uncertainty D.2
- D.3
- Uncertainty concerning the angular source energy distribution level D.4
- D.4.1 General
- Uncertainty resulting from the modelling of substitute source or sources D.4.2
- Uncertainty resulting from the modelling of the actual situation D.4.3
- D.4.4 Uncertainty concerning the actual shooting direction and position of the sound source
- D.4.5 Uncertainties resulting from the used sound propagation model
- D.4.6 Combined and expanded prediction uncertainty

Page count: 59