



SLOVENSKI STANDARD SIST EN ISO 5114-1:2024

01-september-2024

**Akustika - Določanje negotovosti, povezane z meritvami zvočnih emisij - 1. del:
Ravni zvočne moči, določene na podlagi meritev zvočnega tlaka (ISO 5114-1:2024)**

Acoustics - Determination of uncertainties associated with sound emission measures -
Part 1: Sound power levels determined from sound pressure measurements (ISO 5114-
1:2024)

Akustik - Bestimmung der Unsicherheiten von Schallemissionsmessgrößen - Teil 1:
Bestimmung von Schalleistungspegeln aus Schalldruckmessungen (ISO 5114-1:2024)

Acoustique - Détermination des incertitudes associées aux mesurages de l'émission
sonore - Partie 1: Niveaux de puissance acoustique déterminés à partir des mesurages
de pression acoustique (ISO 5114-1:2024)

[SIST EN ISO 5114-1:2024](https://standards.iteh.ai/SIST/EN/5114-1/2024)

[https://standards.iteh.ai/SIST/EN/5114-1:2024](https://standards.iteh.ai/SIST/EN/5114-1/2024) Ta slovenski standard je istoveten z: [EN ISO 5114-1:2024](https://standards.iteh.ai/ISO/5114-1/2024)

ICS:

17.140.01	Akustična merjenja in blaženje hrupa na splošno	Acoustic measurements and noise abatement in general
-----------	--	---

SIST EN ISO 5114-1:2024

en,fr,de

EUROPEAN STANDARD

EN ISO 5114-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2024

ICS 17.140.01

English Version

Acoustics - Determination of uncertainties associated with sound emission measures - Part 1: Sound power levels determined from sound pressure measurements (ISO 5114-1:2024)

Acoustique - Détermination des incertitudes associées aux mesurages de l'émission sonore - Partie 1: Niveaux de puissance acoustique déterminés à partir des mesurages de pression acoustique (ISO 5114-1:2024)

Akustik - Bestimmung der Unsicherheiten von Schallemissionsmessgrößen - Teil 1: Bestimmung von Schalleistungspegeln aus Schalldruckmessungen (ISO 5114-1:2024)

This European Standard was approved by CEN on 14 June 2024.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Türkiye and United Kingdom.

iTeh Standards
Document Preview
SIST EN ISO 5114-1:2024

<https://standards.itih.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Contents	Page
European foreword.....	3

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[SIST EN ISO 5114-1:2024](https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024)

<https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024>

European foreword

This document (EN ISO 5114-1:2024) 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 December 2024, and conflicting national standards shall be withdrawn at the latest by December 2024.

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.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 5114-1:2024 has been approved by CEN as EN ISO 5114-1:2024 without any modification.

[SIST EN ISO 5114-1:2024](https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024)

<https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024>



**International
Standard**

ISO 5114-1

**Acoustics — Determination of
uncertainties associated with sound
emission measures —**

**Part 1:
Sound power levels determined
from sound pressure measurements**

*Acoustique — Détermination des incertitudes associées aux
mesurages de l'émission sonore —*

*Partie 1: Niveaux de puissance acoustique déterminés à partir des
mesurages de pression acoustique*

**First edition
2024-06**

International Standards
(<https://standards.iteh.ai>)
Document Preview

[SIST EN ISO 5114-1:2024](https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024)

<https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024>

ISO 5114-1:2024(en)

iTeh Standards (<https://standards.iteh.ai>) Document Preview

[SIST EN ISO 5114-1:2024](https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024)

<https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024>



COPYRIGHT PROTECTED DOCUMENT

© ISO 2024

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

ISO 5114-1:2024(en)

Contents

	Page
Foreword.....	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions.....	1
4 General concept to describe the uncertainty of measured sound power levels.....	2
5 Determination of σ_{omc}	3
6 Determination of σ_{R0} by round robin tests.....	4
7 Detailed uncertainty budget to determine σ_{R0}	6
8 Determination of σ_{tot}	7
Annex A (informative) Detailed uncertainty budget for sound power determinations in (approximated) free fields according to the direct enveloping method.....	9
Annex B (informative) Detailed uncertainty budget for sound power determinations in (approximated) diffuse fields according to the direct method.....	17
Annex C (informative) Detailed uncertainty budget for sound power determinations using a reference sound source.....	22
Bibliography.....	26

iTech Standards
(<https://standards.iteh.ai>)
Document Preview

[SIST EN ISO 5114-1:2024](https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024)

<https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024>

ISO 5114-1:2024(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 documents 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).

ISO draws attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO takes no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents. ISO shall not be held responsible for identifying any or all such patent rights.

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

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).

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.

SIST EN ISO 5114-1:2024

<https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024>

ISO 5114-1:2024(en)**Introduction**

An assessment of uncertainties that is comprehensible and close to reality is indispensable for reporting and using measured sound power levels. Uncertainties are determined following the principles of ISO/IEC Guide 98-3. This Guide specifies a detailed procedure for uncertainty evaluation that is based upon a mathematical model of the measurement. The detailedness of the model can vary from the mere analysis of the statistical spread of measured sound power levels up to an exhaustive characterisation of all relevant physical phenomena. Different such models are described by this document.

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[SIST EN ISO 5114-1:2024](https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024)

<https://standards.iteh.ai/catalog/standards/sist/ab277ea6-93eb-41a4-936d-fa73471f3a14/sist-en-iso-5114-1-2024>