AS/NZS 16900.14:2021

Australian/New Zealand Standard™

Respiratory protective devices — Methods of test and test equipment

Method 14: Measurement of sound pressure level (ISO 16900-14:2020, MOD)

AS/NZS 16900.14:2021

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The following are represented on Committee SF-010:

Association of Accredited Certification Bodies
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Australian Industry Group
Australian Institute of Health and Safety
Australian Institute of Occupational Hygienists
Australian Institute of Petroleum
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Composites Australia
CSIRO
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Therapeutic Goods Administration
WorkSafe New Zealand

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First published as AS/NZS ISO 16900.14:2021.

Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-010, Occupational Respiratory Protection.

The objective of this document is to specify laboratory test methods for measuring the sound pressure level generated by the respiratory protective device (RPD) and by RPD warning devices, measured on a headform to which the RPD is fitted.

This document is an adoption with national modifications and has been reproduced from ISO 16900-14:2020, *Respiratory protective devices — Methods of test and test equipment — Part 14: Measurement of sound pressure level.*

The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

Appendix ZZ lists the variations to ISO 16900-14:2020 for the application of this document in Australia and New Zealand.

As this document has been reproduced from an International Standard, a full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

Contents

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

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

For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 94, *Personal safety — Personal protective equipment*, Subcommittee SC 15, *Respiratory protective devices*.

This second edition cancels and replaces the first edition (ISO 16900-14:2015), which has been technically revised.

The main changes compared to the previous edition are as follows:

— New text and Figures 2 to 6 have been added to provide more details on the test components and methods.

A list of all parts in the ISO 16900 series can be found on the ISO website.

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.

Introduction

This document is intended as a supplement to the respiratory protective devices (RPD) performance standards. Test methods are specified for complete devices or parts of devices. If deviations from the test method given in this document are necessary, these deviations will be specified in the performance standards.

NOTES

Australian/New Zealand Standard

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1 Scope

This document specifies laboratory test methods for measuring the sound pressure level generated by the respiratory protective device (RPD) and by RPD warning devices, measured on a headform to which the RPD is fitted.

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 2768-2, *General tolerances — Part 2: Geometrical tolerances for features without individual tolerance indications*

ISO 16900-5, *Respiratory protective devices — Methods of test and test equipment — Part 5: Breathing machine, metabolic simulator, RPD headforms and torso, tools and verification tools*

ISO 16972, *Respiratory protective devices — Terms, definitions, graphical symbols and units of measurement*

IEC 61260-1, *Octave-band and fractional-octave-band filters — Part 1: Specifications*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 16972 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
A-weighted equivalent continuous sound pressure level
$L_{p,\mathrm{A,eq}T}$
10 times the logarithm to the base 10 of the ratio of the time average of the square of the A-weighted sound pressure, p_A, during a stated time interval of duration T (starting at t_1 and ending at t_2), to the square of the reference value, p_0, expressed in decibels

$$L_{p,\mathrm{A,eq}T} = 10\log_{10}\left[\frac{\frac{1}{T}\int_{t_2}^{t_1} {p_\mathrm{A}}^2(t)\mathrm{d}t}{{p_0}^2}\right]\mathrm{dB} \quad (1)$$

where the reference value, p_0, is 20 µPa.

[SOURCE: ISO 9612:2009, 3.1, modified — "A-weighted time-averaged sound pressure level ($L_{p,\mathrm{A},T}$)" deleted.]