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ISO 16900-3:2012

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Respiratory protective devices—Methods of test and test equipment

Part 3: Determination of particle filter penetration

This Australian Standard® was prepared by Committee SF-010, Occupational Respiratory Protection. It was approved on behalf of the Council of Standards Australia on 6 May 2015. This Standard was published on 30 June 2015.

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- Association of Accredited Certification Bodies
- Australasian Fire and Emergency Service Authorities Council
- Australian Chamber of Commerce and Industry
- Australian Council of Trade Unions
- Australian Industry Group
- Australian Institute of Occupational Hygienists
- Certification Interests, Australia
- Composites Australia
- Department of Defence (Australian Government)
- Department of Trade and Investment, NSW
- TestSafe Australia
- WorkSafe Victoria

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Australian Standard®

Respiratory protective devices—Methods of test and test equipment

Part 3: Determination of particle filter penetration

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PREFACE

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee SF-010, Occupational Respiratory Protection, to ultimately supersede (in part) AS/NZS 1716:2012, *Respiratory protective devices*.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

It is the Committee's intention that AS/NZS 1716:2012 will not superseded until all relevant test methods and requirements covering respiratory protective devices are published by ISO and adopted as Australian or Australian/New Zealand Standards.

A period of time (to be determined at a later date) will be allowed for manufacturers, regulators and end users to test, assess and obtain appropriate products and programs before AS/NZS 1716:2012 is then withdrawn.

The objective of this Standard is to provide methods of test for determining penetration of separate or integral particle filters of respiratory protective devices.

This Standard is identical with, and has been reproduced from ISO 16900-3:2012, *Respiratory protective devices—Methods of test and test equipment*, Part 3: *Determination of particle filter penetration*.

As this Standard is reproduced from an International Standard, the following applies:

(a) In the source text 'this part of ISO 16900' should read 'this Australian Standard'.

(b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian Standards or Australian/New Zealand Standards as follows:

Reference to International Standard		*Australian Standard*	
ISO 16972	Respiratory protective devices—Terms, definitions, graphical symbols and units of measurement	AS ISO 16972	Respiratory protective devices—Terms, definitions, graphical symbols and units of measurement

Only normative references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

The term 'normative' has been used in this Standard to define the application of the annex to which it applies. A 'normative' annex is an integral part of a Standard.

CONTENTS

INTRODUCTION

This part of ISO 16900 is intended as a supplement to the respiratory protective devices (RPD) performance standard ISO 17420 (all parts). Test methods are specified for complete devices or parts of devices that are intended to comply with ISO 17420. If deviations from the test method given in this part of ISO 16900 are necessary, these deviations will be specified in ISO 17420.

AUSTRALIAN STANDARD

Respiratory protective devices—Methods of test and test equipment

Part 3:
Determination of particle filter penetration

1 Scope

This part of ISO 16900 specifies the test methods for particle filter penetration of separate or integral filters for respiratory protective devices.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

ISO 21748, *Guidance for the use of repeatability, reproducibility and trueness estimates in measurement uncertainty estimation*

3 Terms and definitions

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

4 Prerequisites

The performance standard shall indicate the conditions of the test. This includes the following:

a) number of specimens;

b) sequence of preconditioning;

c) challenge aerosol flow rate(s) through the filter under test.

5 General test requirements

Unless otherwise specified, the values stated in this part of ISO 16900 are expressed as nominal values. Except for temperature limits, values which are not stated as maxima or minima shall be subject to a tolerance of ±5 %. Unless otherwise specified, the ambient temperature for testing shall be between 16°C and 32°C and (50 ± 30) % relative humidity. Any temperature limits specified shall be subject to an accuracy of ±1 °C.

6 Principle

A challenge aerosol of known characteristics is generated and passed through the filter under test. The concentration of aerosol downstream of the filter divided by the aerosol concentration upstream of the filter as measured on the same type of detector, multiplied by a factor of 100, is the percentage penetration of the filter under test.