

Australian Standard[®]

**Health and safety in welding and allied
processes—Sampling of airborne
particles and gases in the operator's
breathing zone**

Part 1: Sampling of airborne particles



This Australian Standard® was prepared by Committee CH-031, Methods for Examination of Workplace Atmospheres. It was approved on behalf of the Council of Standards Australia on 19 September 2006.

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The following are represented on Committee CH-031:

- Australian Aluminium Council
 - Australian Chamber of Commerce and Industry
 - Australian Institute of Occupational Hygienists
 - Australian Mines and Metals Associations (Incorporated)
 - Bureau of Steel Manufacturers of Australia
 - Clean Air Society of Australia & New Zealand
 - Coal Services
 - Commonwealth Department of Health and Ageing
 - Department of Administrative and Information Services, SA
 - Department of Consumer and Employment Protection Worksafe Division, WA
 - Department of Mineral Resources, NSW
 - National Association of Testing Authorities Australia
 - WorkCover New South Wales
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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through public comment period.

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AS 3853.1—2006

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Health and safety in welding and allied processes—Sampling of airborne particles and gases in the operator's breathing zone

Part 1: Sampling of airborne particles

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PREFACE

This Standard was prepared by the Standards Australia Committee CH-031, Methods for Examination of Workplace Atmospheres to supersede AS 3853.1—1991, *Fume from welding and allied processes*, Part 1: *Guide to methods for the sampling and analysis of particulate matter*.

This Standard is identical with and has been reproduced from ISO 10882-1:2001, *Health and safety in welding and allied processes—Sampling of airborne particles and gases in the operator's breathing zone*, Part 1: *Sampling of airborne particles*.

The objective of this Standard is to provide a method for gravimetric determination of personal exposure to welding fume and provide information about the use of chemical analysis to determine personal exposure to specific particles in welding fume.

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

- (a) Its number appears on the cover and title page while the International Standard number appears only on the cover.
- (b) In the source text, 'this part of EN ISO 10882' and 'this European Standard' should read 'this Australian Standard'.
- (c) A full point should be substituted for a comma when referring to a decimal marker.

This Standard is Part 1 of the following series:

AS

3853	Health and safety in welding and allied processes—Sampling of airborne particles and gases in the operator's breathing zone
3853.1	Part 1: Sampling of airborne particles (this Standard)
3853.2	Part 2: Sampling of gases

References to international Standards should be replaced by Australian Standards or other publications as follows:

<i>Reference to International Standard</i>	<i>Australian Standard</i>
EN ISO	AS
4063 Welding and allied processes—Nomenclature of processes and reference numbers	2812 Welding, brazing and cutting of metals—Glossary of terms
EN	AS/NZS
175 Personal protection—Equipment for eye and face protection during welding and allied processes	1337 Eye protectors for industrial applications
	1338 Filters for eye protectors—Filters for protection against radiation generated in welding and allied operations
481 Workplace atmospheres—Size fraction definitions for measurement of airborne particles	— See Note 1

EN		NOHSC	
482	Workplace atmospheres—General requirements for the performance of procedures for the measurement of chemical agents	1003 (1995)	Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment and subsequent updates (See Note 2)
689	Workplace atmospheres—Guidance for the assessment of exposure by inhalation to chemical agents or comparison with limit values and measurement strategy	3008 (1995)	Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment and subsequent updates (See Note 2)
1540	Workplace atmospheres—Terminology	1003 (1995)	Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment and subsequent updates (See Note 2)
ISO			
3534	Statistics—Vocabulary and symbols	—	See Note 3
3534-1	Part 1: Probability and general statistical terms	—	See Note 4
6879	Air quality—Performance characteristics and related concepts for air quality measuring method	—	See Note 4
13205	Workplace atmospheres—Assessment of performance of instruments for measurement of airborne particle concentrations	—	See Note 5

NOTES:

- 1 In Australia, ISO 7708, *Air quality—Particle size fraction definitions for health-related sampling* is widely referenced in place of EN 481.
- 2 Subsequent updates to NOHSC 1003 (1995), NOHSC 3008 (1995) and all NOHSC exposure standards can be found in the Hazardous Substances Information Systems (HSIS) at <http://www.nohsc.gov.au/applications/hsis/>
- 3 ISO 3534-1 contains the definition of ‘true value’ that is reproduced as definition 3.24 in this Standard.
- 4 ISO 6879 contains terms and definitions of performance characteristics related to air quality measuring methods. It does not include specific methods for determining air quality or obtaining representative samples.
- 5 Pumps sold in Australia may claim compliance with EN 1232 *Workplace atmospheres—Pumps for personal sampling of chemical agents—Requirements and methods standards*.

The term ‘informative’ has been used in this Standard to define the application of the annex to which it applies. An ‘informative’ annex is only for information and guidance.

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