AS/NZS 3580.9.17:2018

Australian/New Zealand Standard™

Methods for sampling and analysis of ambient air

Method 9.17: Demonstration of equivalence for ambient particulate matter monitoring methods

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EV-007, Methods for Examination of Air. It was approved on behalf of the Council of Standards Australia on 28 September 2018 and by the New Zealand Standards Approval Board on 3 October 2018.
This Standard was published on 1 November 2018.

The following are represented on Committee EV-007:

Australian Aluminium Council
Australian Industry Group
Clean Air Society of Australia and New Zealand
CSIRO
Department of Environment Regulation, WA
Department of Science, Information Technology and Innovation, Qld
Environment Canterbury, NZ
Environment Protection Authority, Vic.
Ministry for the Environment, NZ
National Association of Testing Authorities Australia
Office of Environment and Heritage, NSW

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.saiglobal.com or Standards New Zealand web site at www.standards.govt.nz and looking up the relevant Standard in the on-line catalogue.

For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of Standards Australia or the New Zealand Standards Executive at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS 3580.9.17:2017.

Australian/New Zealand Standard™

Methods for sampling and analysis of ambient air

Method 9.17: Demonstration of equivalence for ambient particulate matter monitoring methods

First published as AS/NZS 3580.9.17:2018.

Jointly published by SAI Global Limited under licence from Standards Australia Limited, GPO Box 476, Sydney, NSW 2001 and by Standards New Zealand, PO Box 1473, Wellington 6140.

ISBN 978 1 76072 209 8

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EV-007, Methods for Examination of Air.

The objective of this Standard is to provide a methodology for determining whether a particulate matter monitoring instrument is equivalent to a reference method under Australian or New Zealand ambient conditions, where the instrument is not covered under a specific Standard for that technology.

During preparation of this Standard, the Committee took note of the European Commission Working Group on Guidance for the Demonstration of Equivalence publication (January 2010), 'Guide to the Demonstration of Equivalence of Ambient Air Monitoring Methods' (the EC Guide). Acknowledgment is made to JRC-IEC (Joint Research Centre—Institute for Environment and Sustainability) and the extracts used from the guide have been modified.

This Standard represents a subset of the methods and procedures outlined in the EC Guide. For this reason, candidate method instruments will have undergone testing in accordance with EN 15267* or have been designated United States Environmental Protection Agency (US EPA) equivalent method status†, for the particulate matter size fraction under consideration.

The terms 'normative' and 'informative' have been used in this Standard to define the application of the appendix to which they apply. A 'normative' appendix is an integral part of a Standard, whereas an 'informative' appendix is only for information and guidance.

* Refer to www.qal1.de

† Refer to https://www3.epa.gov/ttn/amtic/criteria.html

CONTENTS

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
Methods for sampling and analysis of ambient air

Method 9.17: Demonstration of equivalence for ambient particulate matter monitoring methods

1 SCOPE

This Standard applies to continuous methods for monitoring particulate matter size fractions in ambient air, specifying a procedure for determining whether a candidate method is equivalent to the reference method under the ambient conditions experienced at its intended sampling locations. Only instruments that conform with the requirements of EN 15267, or have obtained US EPA equivalent method status, are acceptable as candidate method instruments for the particulate matter size fraction under consideration.

2 APPLICATION

This Standard is suitable for the evaluation of continuous particulate matter monitoring instruments not covered under a specific Standard for that technology, such as in-situ optical methods.

The procedure in this Standard enables the establishment of relationships with the reference method (RM) that can be applied to correct the candidate method (CM) output in order to demonstrate equivalence.

The test procedure consists of a series of field tests in which the candidate method is tested alongside the filter-based gravimetric reference method, operated in accordance with the applicable Australian or Australian/New Zealand Standard, i.e. AS/NZS 3580.9.6, AS/NZS 3580.9.7, AS 3580.9.9, AS 3580.9.10 or AS/NZS 3580.9.14.

NOTE: The particle size range measured by most continuous methods is unsuited to the measurement of total suspended particulate matter.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS		
3580	Methods for sampling and analysis of ambient air	
3580.9.9	Method 9.9:	Determination of suspended particulate matter—PM_{10} low volume sampler—Gravimetric method
3580.9.10	Method 9.10:	Determination of suspended particulate matter—$PM_{2.5}$ low volume sampler—Gravimetric method
AS/NZS		
3580	Methods for sampling and analysis of ambient air	
3580.1.1	Method 1.1:	Methods for sampling and analysis of ambient air—Guide to siting air monitoring equipment
3580.9.6	Method 9.6:	Determination of suspended particulate matter—PM_{10} high volume sampler with size selective inlet—Gravimetric method
3580.9.7	Method 9.7:	Determination of suspended particulate matter—Dichotomous sampler (PM_{10}, coarse PM and $PM_{2.5}$)—Gravimetric method