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Air quality — Validation of air quality measurement methods in the standardization process

Qualité de l'air — La validation des méthodes de mesure de la qualité de l'air dans le processus de normalisation

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Contents

Page

Foreword ... **iv**
Introduction ... **v**
1 Scope ... **1**
2 Normative references ... **1**
3 Terms and definitions ... **1**
4 Abbreviated terms ... **3**
5 Purposes for validation ... **4**
6 Objectives for validation ... **5**
7 Types of validation ... **5**
7.1 Validation of reference methods ... 5
7.2 Validation of alternative methods ... 7
7.3 Validation in the absence of certified reference materials ... 7
8 Objective, design and documentation of a validation study ... **8**
8.1 General ... 8
8.2 Objective of a validation study ... 8
8.2.1 General ... 8
8.2.2 Purpose(s) for performing the measurement ... 8
8.2.3 Representative sampling ... 8
8.2.4 Sample preparation ... 8
8.2.5 Analysis ... 9
8.2.6 Performance characteristics ... 9
8.2.7 Determination of the result of measurement and the associated measurement uncertainty ... 9
8.2.8 Documentation and reporting ... 9
8.3 Design of the validation study ... 9
8.4 Documentation of the validation study ... 10
8.4.1 Report on the validation study ... 10
8.4.2 Storage of results of the validation study ... 10
9 Examples of validation procedures for specific types of measurement method ... **11**
9.1 General ... 11
9.2 Stationary source emissions ... 11
9.2.1 General ... 11
9.2.2 Manual measurement methods ... 11
9.2.3 Automated measurement methods ... 11
9.2.4 Test bench validation ... 11
9.2.5 Field test validation ... 12
9.2.6 Final evaluation ... 12
9.3 Workplace atmospheres ... 12
9.4 Ambient atmospheres ... 12
9.5 Meteorology ... 12
9.6 Indoor air ... 12
Annex A (informative) **Stationary source emissions** ... **14**
Annex B (informative) **Workplace atmospheres** ... **35**
Annex C (informative) **Ambient atmospheres** ... **47**
Annex D (informative) **Meteorology** ... **50**
Annex E (informative) **Indoor air** ... **51**
Annex F (informative) **Information from other sources** ... **54**
Bibliography ... **56**

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Foreword

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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 document 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).

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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 146, *Air quality*, Subcommittee SC 4, *General aspects*.

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.

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Introduction

ISO/IEC 17025 defines expectations for verification and validation of test methods. These expectations are based on definitions in ISO/IEC Guide 99 and aim to ensure that test methods are suitable for their intended use and that test results have a known, documented level of quality.

This document describes protocols that have been used within ISO/TC 146 and other technical committees on air quality to verify and validate measurement methods. It also establishes guidance intended to be used for method validation. This document seeks to establish a consistent framework for method validation within ISO/TC 146 and its subcommittees.

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Air quality — Validation of air quality measurement methods in the standardization process

1 Scope

This document provides an overview of the validation of air quality measurement methods in the standardization process.

This document deals with robustness testing and interlaboratory testing as the two main steps of partial and full validation. It applies to the different inter-related elements of air quality measurement methods, covering e.g. sampling, sample preparation, storage and transportation of the sample, extraction, analysis or quantification of a measured component and reporting.

Consequently, this document focuses on the "why" and "what" of validation tasks in direct relation to the different steps of the standardization process. This document is focused on the validation tasks for measurement methods either for the whole measurement process or for one of its constituent parts.

Given the informative aim of this document, it does not contain detailed procedures for performing the validation tasks, such as number of laboratories, number of samples, etc.

This document is relevant to measurement methods in ISO/TC 146 and all of its subcommittees.

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 4225, *Air quality — General aspects — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4225 and the following apply.

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

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

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

3.1
verification
provision of objective evidence that a given item fulfils specified requirements

[SOURCE: ISO/IEC Guide 99:2007, 2.44]

3.2
validation
verification, where the specified requirements are adequate for an intended use

[SOURCE: ISO/IEC Guide 99:2007, 2.45]

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