



**SLOVENSKI STANDARD**  
**oSIST prEN 17656:2021**  
**01-april-2021**

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**Emisije nepremičnih virov - Zahteve za sheme preverjanja usposobljenosti za izvajanje meritev emisij**

Stationary source emissions - Requirements on proficiency testing schemes for emission measurements

Emissionen aus stationären Quellen - Anforderungen an Ringversuche für Emissionsmessungen

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## Stationary source emissions - Requirements on proficiency testing schemes for emission measurements

Emissionen aus stationären Quellen - Anforderungen an Ringversuche für Emissionsmessungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 264.

If this draft becomes a European Standard, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

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**prEN 17656:2021 (E)**

## **European foreword**

This document (prEN 17656:2021) has been prepared by Technical Committee CEN/TC 264 “Air quality”, the secretariat of which is held by DIN.

This document is currently submitted to the CEN Enquiry.

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## Introduction

Proficiency testing based on interlaboratory comparisons are widely used for a number of purposes and their use is increasing internationally. Typical purposes for proficiency testing can include:

- evaluation of the performance of laboratories for specific tests or measurements and monitoring laboratories' continuing performance;
- identification of problems in laboratories and initiation of actions for improvement which, for example, may be related to inadequate test or measurement procedures, effectiveness of staff training and supervision, or calibration of equipment;
- establishment of the effectiveness and comparability of test or measurement methods;
- provision of additional confidence to laboratory customers;
- identification of interlaboratory differences;
- education of participating laboratories based on the outcomes of such comparisons;
- validation of uncertainty claims.

The need for ongoing confidence in laboratory performance is not only essential for laboratories and their customers but also for other interested parties, such as regulators, laboratory accreditation bodies and other organizations that specify requirements for laboratories. EN ISO/IEC 17011 requires accreditation bodies to take account of laboratories' participation and performance in proficiency testing. The European Accreditation Organization (EA) recommends including such activities and their results more strongly in the demonstration of competence.

EN ISO/IEC 17043 specifies general requirements on the competence of proficiency testing providers. Their competence covers the design, the performance and the evaluation of proficiency tests. EN ISO/IEC 17043 explicitly states that this standard can be used as a basis for the specification of specific technical requirements in specific fields of application.

This document will supplement EN ISO/IEC 17043:2010 by providing clarification and additional information for proficiency testing schemes in the field of emission measurements. However, it will not re-state all the provisions of EN ISO/IEC 17043:2010 and users are reminded of the need to comply with all the relevant criteria detailed in EN ISO/IEC 17043:2010.

**prEN 17656:2021 (E)****1 Scope**

This document supplements the requirements of EN ISO/IEC 17043:2010 for proficiency testing schemes for emission measurements. It specifies specific requirements for

- competence of proficiency testing providers,
- test facility characteristics, and
- design, operation and evaluation of proficiency testing schemes by means of interlaboratory comparisons.

All these aspects are necessary in order to organize and conduct proficiency testing on emission measurements.

Requirements on the competence of proficiency testing providers cover personnel, organisation, equipment and environment.

Requirements on the test facility characteristics cover measurement sections, measurements ports and working area for the participants.

Requirements on the proficiency testing schemes cover

- design, including planning, preparations, homogeneity and stability of test atmospheres and statistical design,
- operation, including handling and instruction of participants,
- calculation and use of assigned values, and
- testing results evaluation, including statistical data.

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This document supports the application of proficiency testing schemes for checking the performance of testing laboratories in the context of qualification, accreditation and related quality checks in relation to the application of standardized measurement methods such as standard reference methods (SRM) or alternative methods (AM).

**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.

EN ISO 17034, *General requirements for the competence of reference material producers (ISO 17034)*

EN ISO/IEC 17043:2010, *Conformity assessment — General requirements for proficiency testing (ISO/IEC 17043:2010)*

ISO 13528:2015, *Statistical methods for use in proficiency testing by interlaboratory comparison*



### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO/IEC 17043 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

##### **proficiency testing**

evaluation of participant performance against pre-established criteria by means of interlaboratory comparisons

[SOURCE: EN ISO/IEC 17043:2010, 3.7]

#### 3.2

##### **interlaboratory comparison**

organization, performance and evaluation of measurements or tests on the same or similar items by two or more laboratories in accordance with predetermined conditions

[SOURCE: EN ISO/IEC 17043:2010, 3.4]

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#### 3.3

##### **proficiency testing provider (standards.iteh.ai)**

organization which takes responsibility for all tasks in the development and operation of a proficiency testing scheme

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[SOURCE: EN ISO/IEC 17043:2010, 3.9]

#### 3.4

##### **proficiency testing scheme**

proficiency testing designed and operated in one or more rounds for a specified area of testing, measurement, calibration or inspection

[SOURCE: EN ISO/IEC 17043:2010, 3.11]

#### 3.5

##### **proficiency test item**

sample, product, artefact, reference material, piece of equipment, measurement standard, data set or other information used for proficiency testing

[SOURCE: EN ISO/IEC 17043:2010, 3.8]

#### 3.6

##### **participant**

laboratory, organization or individual that receives proficiency test items and submits results for review by the proficiency testing provider

[SOURCE: EN ISO/IEC 17043:2010, 3.6]

**prEN 17656:2021 (E)****3.7****homogeneity**

uniform distribution of chemical and physical properties of the sample gas within the geometry of the measurement plane

**3.8****stability**

uniform distribution of chemical and physical properties of the sample gas within the sampling time

**3.9****measurement site**

place on the waste gas duct in the area of the measurement plane(s) consisting of structures and technical equipment, for example working platforms, measurement ports, energy supply

Note 1 to entry: Measurement site is also known as sampling site.

[SOURCE: EN 15259:2007, 3.11]

**3.10****measurement plane**

plane normal to the centreline of the duct at the sampling position

Note 1 to entry: Measurement plane is also known as sampling plane.

[SOURCE: EN 15259:2007, 3.13]

**3.11****measurement port**

opening in the waste gas duct along the measurement line, through which access to the waste gas is gained

Note 1 to entry: Measurement port is also known as sampling port or access port.

[SOURCE: EN 15259:2007, 3.18]

**3.12****measurement line**

line in the measurement plane along which the measurement points are located, bounded by the inner duct wall

Note 1 to entry: Measurement line is also known as sampling line.

[SOURCE: EN 15259:2007, 3.15]

**3.13****measurement point**

position in the measurement plane at which the sample stream is extracted or the measurement data are obtained directly

Note 1 to entry: Measurement point is also known as sampling point.

[SOURCE: EN 15259:2007, 3.16]

**3.14****standard reference method****SRM**

reference method prescribed by European or national legislation

[SOURCE: EN 15259:2007, 3.9]

**3.15****reference method****RM**

measurement method taken as a reference by convention, which gives the accepted reference value of the measurand

Note 1 to entry: A reference method is fully described.

Note 2 to entry: A reference method can be a manual or an automated method.

Note 3 to entry: Alternative methods can be used if equivalence to the reference method has been demonstrated.

[SOURCE: EN 15259:2007]

**3.16****measurement method**

method described in a written procedure containing all the means and procedures required to sample and analyse, namely field of application, principle and/or reactions, definitions, equipment, procedures, presentation of results, other requirements and measurement report

[SOURCE: EN 14793:2017, 3.8]

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**3.17****alternative method****AM**

measurement method which complies with given criteria with respect to the reference method

Note 1 to entry: An alternative method can consist of a simplification of the reference method.

[SOURCE: adapted from EN 14793:2017, 3.3]

**4 Technical requirements****4.1 General**

Application of EN ISO/IEC 17043 to proficiency testing on emission measurement methods require specific solutions due to the specific nature of emission measurements.

The specific nature of emission measurements include:

- complex gas matrix including pollutants of interest and possible interferents;
- wide concentration ranges;
- water-vapour content (condensing or non-condensing);
- high sample gas temperature;