# SLOVENSKI STANDARD
# oSIST prEN 18443-1:2026

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**Instrumentalni sistemi za monitoring vonjav (IOMS) - 1. del: Definicije in splošni vidiki**

Instrumental Odour Monitoring Systems (IOMS) - Part 1: Definitions and general aspects

Instrumentelle Geruchsüberwachungssysteme (IOMS) - Teil 1: Definitionen und allgemeine Aspekte

Systèmes de surveillance instrumentale des odeurs (IOMS) - Partie 1: Définitions et aspects généraux

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**Ta slovenski standard je istoveten z:** **prEN 18443-1**

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|---|---|---|
| 13.040.20 | Kakovost okoljskega zraka | Ambient atmospheres |

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**DRAFT**
**prEN 18443-1**

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English Version

# Instrumental Odour Monitoring Systems (IOMS) - Part 1: Definitions and general aspects

Systèmes de surveillance instrumentale des odeurs (IOMS) - Partie 1: Définitions et aspects généraux

Instrumentelle Geruchsüberwachungssysteme (IOMS) - Teil 1: Definitionen und allgemeine Aspekte

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# Contents

Page

European foreword ... 3
Introduction ... 4
1 Scope ... 6
2 Normative references ... 6
3 Terms and definitions ... 7
4 General aspects of IOMS design and management ... 26
4.1 Odour metrics returned from an IOMS ... 26
4.2 Assurance of metrological validity of results ... 26
4.3 Logical structure of an IOMS ... 26
Figure 1 — Flowchart of the measuring process of an IOMS ... 27
4.4 General concerns about odour concentration measurements by an IOMS ... 28
4.5 Safety aspects ... 28
5 Contexts of application ... 28
5.1 General ... 28
5.2 Channelled, stack emissions and workplace air ... 29
5.3 Fence-line ... 30
5.4 Ambient air at receptors ... 30
6 Responsibilities ... 31
7 Documentation ... 31
7.1 General ... 31
7.2 Test report ... 32
Annex A (normative) Reference methods for odour metrics ... 33
A.1 General ... 33
A.2 Odour presence indicator (OPI) ... 33
A.3 Odorant gas class indicator (OCI) ... 33
A.4 Olfactory stimulus indicator (OSI) ... 34
Annex B (informative) Typical ranges of odour concentrations ... 35
Table B.1 — Typical ranges of odour concentrations ... 35
Bibliography ... 36

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## European foreword

This document (prEN 18443-1:2026) 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

This series of documents specifies requirements for instrumental odour monitoring systems for the monitoring of odour in ambient air and in emissions to ambient air.

This series of documents is intended to assess the suitability of Instrumental Odour Monitoring System (IOMS) to generate relevant indicators for the presence and attributes of odour as would be perceived by human observers. A benefit of instrumental odour monitoring systems is that they can be used for continuous measurement.

Instruments are limited in their ability to mimic human olfaction and its very specific sensitivity to hundreds of odorants. Some odorants influence human odour perception even at very low concentrations. The relation between the concentrations of odorants in a gas mixture and the resulting human perception is highly complex and is never completely known. Instruments currently give results limited to a reduced number of substances and are not able to replicate exactly that relation. In most applications, many compounds (e.g. non odorous compounds or background odorants) act as interferents for IOMS. Humidity and temperature are common influence quantities, too.

Key topics in this series of document are the qualification of metrological performance of IOMS and the validation of correlation of the measurement result (odour metric which is output of IOMS) with human odour perception.

The qualification of metrological performance of IOMS and the validation of the outputted odour metric have significant peculiarities with respect to other automated measuring instruments:

— since odour presence indicator and odorant gas class indicator are categorical indicators, the performance characteristics specified in available standards about automated measuring instruments are not suitable.

— reference methods to validate the odour metric outputted by IOMS are based on human panels and therefore have measurement uncertainties which are not generally negligible in the elaboration of measurement results to obtain performance characteristics.

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This series of documents does not apply to:

a) determination of the odour concentration in $ou_E/m^3$, for which the reference method is specified in EN 13725. This document is not aimed at demonstrating equivalence between the determination of olfactory stimulus quantity using an IOMS and the method described in EN 13725 and letting an IOMS to implement an alternative method to EN 13725

b) monitoring of hedonic tone (or pleasantness or unpleasantness)

c) monitoring of odour annoyance

d) technical design of the odour monitoring system

e) health and safety air monitoring.



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This series of documents comprises three parts:

— Instrumental Odour Monitoring Systems (IOMS) - Part 1: Definitions and general aspects

— Instrumental Odour Monitoring Systems (IOMS) - Part 2: Technical specifications and QA/QC requirements

— Instrumental Odour Monitoring Systems (IOMS) - Part 3: Field validation

This document is part 1 of a series of documents which specifies requirements for instrumental odour monitoring systems.

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# 1 Scope

This document specifies:

— definitions of specific terms used in this series of documents

— general aspects of IOMS design and management

— contexts of application where the use of IOMS is examined in this series of documents

— minimal documentation for the management of an IOMS

This document covers definitions and general aspects relating to instrumental odour monitoring in:

1) ambient air

2) ambient air at the fence line of the source installation

3) odorous gas emissions, including waste gases upstream of odorant abatement devices.

This document does not apply to definitions and general aspects relating to:

a) determination of the odour concentration in $ou_E/m^3$, for which the reference method is specified in EN 13725. This document is not aimed at demonstrating equivalence between the determination of olfactory stimulus quantity using an IOMS and the method described in EN 13725 and letting an IOMS to implement an alternative method to EN 13725

b) monitoring of hedonic tone (or pleasantness or unpleasantness)

c) monitoring of odour annoyance

d) health and safety air monitoring.

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# 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.

EN 13725, *Stationary source emissions - Determination of odour concentration by dynamic olfactometry and odour emission rate*

EN 16841-1, *Ambient air - Determination of odour in ambient air by using field inspection - Part 1: Grid method*

EN 16841-2, *Ambient air - Determination of odour in ambient air by using field inspection - Part 2: Plume method*



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## 3 Terms and definitions

For the purposes of this document, the following terms and definitions 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**
**accuracy index**
**AI**
metrological characteristic of a measuring system producing a binary indicator, expressed as the percentage of true results to the total (true and false) results

**3.2**
**ambient air**
outdoor air in the troposphere, excluding workplaces and places to which people do not have regular access

[SOURCE: Directive 2008/50/EC, article 2, definition 1, modified]

**3.3**
**assessor**
somebody who participates in odour testing

[SOURCE: EN 13725:2022, 3.1.2]

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**3.4**
**background matrix**
interferents that do not originate from the source of the odour under study

Note 1 to entry: In the validation process, the background matrix is a set (usually not completely known) of interferents

**3.5**
**binary indicator**
categorical indicator on a measurement scale consisting of two categories

Note 1 to entry: No/yes, zero/one, negative/positive, fail/pass, odour absence/odour presence are examples of couples of binary indicator values.



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