SLOVENSKI STANDARD
kSIST-TS FprCEN/TS 18443-3:2026

01-december-2026

Instrumentalni sistemi za monitoring vonjav (IOMS) - 3. del: Validacija na terenu

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

Instrumentelle Geruchsüberwachungssysteme (IOMS) - Teil 3: Feldvalidierung

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TECHNICAL SPECIFICATION

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TECHNISCHE SPEZIFIKATION

FINAL DRAFT
FprCEN/TS 18443-3

October 2026

ICS

English Version

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

Instrumentelle Geruchsüberwachungssysteme (IOMS) - Teil 3: Feldvalidierung

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European foreword

This document (FprCEN/TS 18443-3:2026) 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 Vote on TS.

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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/absence indicators and odorant gas class indicators are categorical indicators, the performance characteristics specified in available standards about automated measuring instruments are not suitable.

— the 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.

Sample Document

This series of documents does not apply to:

a) direct 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 to demonstrate the equivalency between the determination of odour concentration using a IOMS and the method described in EN 13725 and letting an IOMS to implement an alternative method to EN 13725

b) direct monitoring of hedonic tone (or pleasantness or unpleasantness) even if a qualitative data (attributes) can be supplied by a trained IOMS

c) direct assessment of odour annoyance

d) the technical design of the odour monitoring system

e) the monitoring of air quality for purposes of environmental health and safety

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

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