ICS 13.040.20 SLOVENSKÁ TECHNICKÁ NORMA Január 2014

STN	**Ochrana ovzdušia. Atmosférické merania v prízemnej vrstve diferenciálnou optickou absorpčnou spektroskopiou (DOAS). Merania vonkajšieho ovzdušia a difúznych emisií.**	**STN EN 16253** 83 5737

Air quality - Atmospheric measurements near ground with active Differential Optical Absorption Spectroscopy (DOAS) - Ambient air and diffuse emission measurements

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 12/13

Obsahuje: EN 16253:2013

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 16253

July 2013

ICS 13.040.20

English Version

Air quality - Atmospheric measurements near ground with active Differential Optical Absorption Spectroscopy (DOAS) - Ambient air and diffuse emission measurements

Qualité de l'air - Mesurages atmosphériques à proximité du sol par Spectroscopie d'Absorption Optique Différentielle (DOAS) - Mesurages de l'air ambiant et des émissions diffuses

Luftqualität - Messungen in der bodennahen Atmosphäre mit der aktiven Differentiellen Optischen Absorptionsspektroskopie (DOAS) - Immissionsmessungen und Messungen von diffusen Emissionen

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Ref. No. EN 16253:2013: E

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Foreword

This document (EN 16253:2013) has been prepared by Technical Committee CEN/TC 264 “Air quality”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by January 2014, and conflicting national standards shall be withdrawn at the latest by January 2014.

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Introduction

Differential Optical Absorption Spectroscopy (DOAS) has been successfully progressed, starting in the late 1970s, from a laboratory based method to a versatile remote sensing technique for atmospheric trace gases. In the DOAS measuring process, the absorption of radiation in the ultraviolet, visible or infrared spectral range by gaseous constituents is measured along an open monitoring path between a radiation source and a spectrometer, and the integral concentration over the monitoring path is determined.

DOAS systems support direct multi-constituent measurements. They provide alternative measuring techniques in that they can handle a large number of measuring tasks which cannot be adequately addressed by in situ techniques based on point measurements. Examples of such tasks include the monitoring of diffuse emissions from area sources such as urban settlements [1], traffic routes, sewage treatment plants and industrially or agriculturally used surface areas; the minimisation of production losses through a detection of leaks in equipment zones or pipeline systems; or ambient air monitoring in any of the above-mentioned applications.

With an appropriate measuring set-up, the local air pollution can usually be assessed very quickly. Measurements can be taken effectively even in areas which are difficult or impossible to access, or where the direct presence of personnel or equipment would be hazardous. The measurement in the open atmosphere eliminates potential losses by sample handling. An overview on the DOAS measurement technique can be found in [2].

1 Scope

This European Standard describes the operation of *active* DOAS measuring systems with continuous radiation source, the calibration procedures and applications in determining gaseous constituents (e.g. NO_2, SO_2, O_3, BTX, Hg) in ambient air or in diffuse emissions.