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NSAI Standards

Irish Standard
I.S. EN 13284-2:2017

Stationary source emissions - Determination of low range mass concentration of dust - Part 2: Quality assurance of automated measuring systems

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NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie

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National Foreword

I.S. EN 13284-2:2017 is the adopted Irish version of the European Document EN 13284-2:2017, Stationary source emissions - Determination of low range mass concentration of dust - Part 2: Quality assurance of automated measuring systems

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13284-2

November 2017

ICS 13.040.40

Supersedes EN 13284-2:2004

English Version

Stationary source emissions - Determination of low range mass concentration of dust - Part 2: Quality assurance of automated measuring systems

Émissions de sources fixes - Détermination de faibles concentrations en masse de poussières - Partie 2 : Assurance qualité des systèmes de mesurage automatisés

Emissionen aus stationären Quellen - Ermittlung der Staubmassenkonzentration bei geringen Staubkonzentrationen - Teil 2: Qualitätssicherung für automatische Messeinrichtungen

This European Standard was approved by CEN on 11 September 2017.

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European foreword

This document (EN 13284-2:2017) 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of an identical text or by endorsement, at the latest by May 2018, and conflicting national standards shall be withdrawn at the latest by May 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13284-2:2004.

This document is Part 2 of the EN 13284 series:

— EN 13284-1, *Stationary source emissions — Determination of low range mass concentration of dust — Part 1: Manual gravimetric method*;

— EN 13284-2, *Stationary source emissions — Determination of low range mass concentration of dust — Part 2: Quality assurance of automated measuring systems*.

Annex G provides details of significant technical changes between this European Standard and the previous edition.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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Introduction

This document describes the quality assurance procedures related to automated measuring systems (AMS) for the determination of dust in waste gas, in order to meet the uncertainty requirements on measured values given by regulations, e.g. EU Directives ([1]), national or other legislation.

This document is derived from EN 14181, which specifies general procedures for establishing quality assurance levels (QAL) for automated measuring systems (AMS) installed on industrial plants for the determination of the waste gas components and other waste gas parameters. It amends EN 14181 and provides guidance specific to dust measurements. It is only applicable in conjunction with EN 14181.

The calibration and validation of dust AMS is based on parallel measurements with the manual gravimetric standard reference method (SRM) described in EN 13284-1.

This document was primarily developed for the measurement of emissions from waste incinerators. From a technical point of view, it can be applied to other processes, for which measurement at an emission limit is required with defined uncertainty.

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1 Scope

This European Standard specifies requirements for the calibration and validation (QAL2), the ongoing quality assurance during operation (QAL3) and the annual surveillance test (AST) of automated measuring systems (AMS) used for monitoring dust emissions from stationary sources to demonstrate compliance with emission limit values (ELV) below 50 mg/m³ at standard conditions. It specifically deals with measurements in wet gases and at low concentrations.

This document is derived from EN 14181 and is only applicable in conjunction with EN 14181.

This document is applicable by direct correlation with the standard reference method (SRM) described in EN 13284-1.

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 13284-1:2017, *Stationary source emissions — Determination of low range mass concentration of dust —Part 1: Manual gravimetric method*

EN 14181:2014, *Stationary source emissions — Quality assurance of automated measuring systems*

EN 15267-3, *Air quality — Certification of automated measuring systems — Part 3: Performance criteria and test procedures for automated measuring systems for monitoring emissions from stationary sources*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13284-1:2017 and EN 14181:2014 apply.

4 Symbols and abbreviations

4.1 Symbols

For the purposes of this document, the following symbols apply.

a intercept of the calibration function

$\hat{a}$ best estimate of a

b slope of the calibration function

$\hat{b}$ best estimate of b

c slope of the quadratic term of the calibration function

d particle diameter

$\overline{D}$ average of differences D_i

e error

E emission limit value

h absolute water vapour content (by volume)

i counter

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