Irish Standard
I.S. EN 15859:2010

Air Quality - Certification of automated dust arrestment plant monitors for use on stationary sources - Performance criteria and test procedures

I.S. EN 15859:2010

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English Version

Air Quality - Certification of automated dust arrestment plant monitors for use on stationary sources - Performance criteria and test procedures

Qualité de l'air - Certification des analyseurs automatiques pour la surveillance des systèmes de réduction des poussières à l'émission des sources fixes - Spécifications de performance et modes opératoires d'essai

Luftbeschaffenheit - Zertifizierung von automatischen Geräten zur Überwachung von Staubabscheidern an stationären Quellen - Mindestanforderungen und Prüfprozeduren

This European Standard was approved by CEN on 11 March 2010.

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Foreword

This document (EN 15859:2010) 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of an identical text or by endorsement, at the latest by October 2010, and conflicting national standards shall be withdrawn at the latest by October 2010

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

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0 Introduction

0.1 General

CEN has established standards for the certification of automated measuring systems (AMS) used for monitoring emissions from stationary sources. This certification is based on the following four sequential stages:

a) performance testing of an AMS;

b) initial assessment of the AMS manufacturer's quality management system;

c) certification;

d) post certification surveillance.

This European Standard defines the performance criteria and procedures for performance testing of automated dust arrestment plant monitors used on stationary sources.

The following two types of dust arrestment plant monitor are covered by this standard:

— a *filter dust monitor* which can be calibrated in mass concentration units (e.g. mg/m^3) and used for dust arrestment control purposes;

— a *filter leakage monitor* which indicates a change in the emissions level or a change in the magnitude of the dust pulses created by the cleaning process.

For the purposes of this standard, the term *instrument* is used to encompass both types of dust arrestment plant monitor. The terms *filter dust monitor* and *filter leakage monitor* are only used where it is necessary to distinguish between the two types.

0.2 Processes

Field-testing of an instrument is ordinarily carried out on the most highly demanding industrial process in the range of applications for which a manufacturer seeks certification. The premise is that if the instrument performs acceptably on this process, then experience has shown that the instrument generally performs well on the majority of other processes. However, there are always exceptions and it is the responsibility of the manufacturer in conjunction with the user to ensure that the instrument performs adequately on a specific process.

0.3 Performance characteristics

A combination of laboratory and field testing is detailed within this European Standard. Laboratory testing is designed to assess whether an instrument can meet, under controlled conditions, the technical requirements of the relevant performance criteria. Field testing, over a minimum three month period, is designed to assess whether an instrument can continue to work and meet the relevant performance criteria in a real application. Field testing is carried out on an industrial process representative of the intended application for the instrument for which the manufacturer seeks certification.

The main instrument performance characteristics are:

— response or detection time;

— influence of ambient conditions;

— influence of variations of the waste gas velocity;

— susceptibility to physical disturbances;

— cross-sensitivity to likely interferents contained in the waste gas;

— performance and accuracy of the filter dust monitor against a standard reference method (SRM), under field conditions;

— performance and accuracy of the filter leakage monitor against a certified particulate AMS tested according to EN 15267-3, under field conditions;

— drift of automatic internal zero and reference points;

— availability and maintenance interval under field conditions;

— reproducibility from two instruments under identical field conditions.

Measurements made by instruments certified to the requirements of this standard do not necessarily fulfil the uncertainty requirements of the EU Directives for Large Combustion Plant and Waste Incineration or the QAL3 functionality of EN 14181:2004.

1 Scope

This European Standard provides the performance criteria and test procedures for filter dust monitors and filter leakage monitors used to ensure that dust arrestment plants used on stationary sources are working satisfactorily.

A filter dust monitor is a dust arrestment plant monitor which can be calibrated in mass concentration units (e.g. mg/m^3) and used for dust arrestment control purposes.

A filter leakage monitor is a dust arrestment plant monitor which indicates a possible problem with the dust arrestment plant by monitoring a change in the emissions level or a change in the magnitude of the dust pulses created by the cleaning process.

This standard is intended for use with the certification procedure for automated measuring systems described in EN 15267-1 and EN 15267-2.

2 Normative references

The following referenced documents are indispensable for the application 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 13284-2, *Stationary source emissions — Determination of low range mass concentration of dust – Part 2: Automated measuring systems*

EN 14181:2004, *Stationary source emissions — Quality assurance of automated measuring systems*

EN 15259, *Air quality – Measurement of stationary source emissions — Requirements for measurement sections and sites and for the measurement objective, plan and report*

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*

EN 50160, *Voltage characteristics of electricity supplied by public distribution networks*

EN 60529, *Degrees of protection provided by enclosures (IP code) (IEC 60529:1989)*

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*

IEC 60068-1, *Environmental testing — Part 1: General and guidance*

IEC 60068-2 (all tests), *Environmental testing — Part 2: Tests*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
dust
particles, of any shape, structure or density, dispersed in the gas phase at the sampling point conditions which may be collected by filtration under specified conditions after representative sampling of the gas to be analysed

NOTE Adapted from EN 13284-1:2001, 3.1.