

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

Stationary source emissions - Determination of low  
range mass concentration of dust - Part 1: Manual  
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## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13284-1:2002 sisaldab Euroopa standardi EN 13284-1:2001 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 16.05.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13284-1:2002 consists of the English text of the European standard EN 13284-1:2001.</p> <p>This document is endorsed on 16.05.2002 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p><b>Käsitlusala:</b></p> <p>This European Standard specifies a reference method for the measurement of low dust content in ducted gaseous steams in the concentrations below 50 mg/m<sup>3</sup> standard conditions. This method has been validated with special emphasis around 5 mg/m<sup>3</sup> on an average half hour sampling time.</p>	<p><b>Scope:</b></p> <p>This European Standard specifies a reference method for the measurement of low dust content in ducted gaseous steams in the concentrations below 50 mg/m<sup>3</sup> standard conditions. This method has been validated with special emphasis around 5 mg/m<sup>3</sup> on an average half hour sampling time.</p>
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**Võtmesõnad:** air pollution, air quality, concentration, definition, definitions, dust, dust contents, dust emissions, emissions, flow, gravimetric analysis, gravimetry, manual, mass concentration, measurement, measuring techniques, particulate matter measurement, stationary

ICS 13.040.40

English version

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

Emissions de sources fixes - Détermination de la faible concentration en masse de poussières - Partie 1: Méthode gravimétrique manuelle

Emissionen aus stationären Quellen - Ermittlung der Staubmassenkonzentration bei geringen Staubkonzentrationen - Teil 1: Manuelles gravimetrisches Verfahren

This European Standard was approved by CEN on 11 October 2001.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## Foreword

This European Standard 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 2002, and conflicting national standards shall be withdrawn at the latest by May 2002.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

This European Standard consists of two parts:

- 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: Automated measuring systems*

The annexes A, B, C, E and F are normative. The annexes D, G and H are informative.

This standard contains a Bibliography.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard specifies a reference method for the measurement of low dust concentration in ducted gaseous streams in the concentrations below  $50 \text{ mg/m}^3$  standard conditions. This method has been validated with special emphasis around  $5 \text{ mg/m}^3$  on an average half hour sampling time.

This European Standard is primarily developed and validated for gaseous streams emitted by waste incinerators. More generally, it may be applied to gases emitted from stationary sources, and to higher concentrations.

If the gases contain unstable, reactive or semi-volatile substances, the measurement depend on the sampling and filter treatment conditions.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

ISO 3966:1977, *Measurement of fluid flow in closed conducts – Velocity area method using Pitot static tubes*.

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and result – Part 2: Basis method for the determination of repeatability and reproducibility of a standard measurement method*.

## 3 Terms and definitions

For the purposes of this European Standard, 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, and which remain upstream of the filter and on the filter after drying under specified conditions

### 3.2

#### **filtration temperature**

temperature of the sampled gas immediately downstream of the filter

### 3.3

#### **"in-stack" filtration**

filtration in the duct with the filter in its filter holder placed immediately downstream of the sampling nozzle

### 3.4

#### **"out-stack" filtration**

filtration outside of the duct with the filter in its heated filter holder placed downstream of the sampling nozzle and the suction tube (sampling probe)

### 3.5

#### **isokinetic sampling**

sampling at a flow rate such that the velocity  $v_N$  and direction of the gas entering the sampling nozzle are the same as the velocity  $v_a$  and direction of the gas in the duct at the sampling point (see Figure 1)