

**Stationary source emissions -  
Determination of mass concentration of  
sulphur dioxide - Reference method**

Stationary source emissions - Determination of mass  
concentration of sulphur dioxide - Reference method

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 14791:2005 sisaldab Euroopa standardi EN 14791:2005 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 28.12.2005 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 14791:2005 consists of the English text of the European standard EN 14791:2005.</p> <p>This document is endorsed on 28.12.2005 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> This European Standard describes a manual method for sampling and determining SO<sub>2</sub> content in ducts and stacks emitting to the atmosphere by two analytical methods: Ion chromatography and Thorin method.</p>	<p><b>Scope:</b> This European Standard describes a manual method for sampling and determining SO<sub>2</sub> content in ducts and stacks emitting to the atmosphere by two analytical methods: Ion chromatography and Thorin method.</p>
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**Võtmesõnad:** air, air pollution, air purification, analysis methods, chimneys

ICS 13.040.40

English Version

## Stationary source emissions - Determination of mass concentration of sulphur dioxide - Reference method

Emissions de sources fixes - Détermination de la concentration massique du dioxyde de soufre - Méthode de référence

Emissionen aus stationären Quellen - Bestimmung der Massenkonzentration von Schwefeldioxid - Referenzverfahren

This European Standard was approved by CEN on 30 September 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



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## Foreword

This European Standard (EN 14791:2005) 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 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

This European Standard 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).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this European Standard.

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

## 1 Scope

This European Standard describes a manual method for sampling and determining SO<sub>2</sub> content in ducts and stacks emitting to the atmosphere by two analytical methods: Ion chromatography and Thorin method.

This European Standard is the Standard Reference Method (SRM) for periodic monitoring and for calibration or control of Automatic Measuring Systems (AMS) permanently installed on a stack, for regulatory purposes or other purposes. To be used as the SRM, the user shall demonstrate that the performance characteristics of the method are better than the performance criteria defined in this European Standard and that the overall uncertainty of the method is less than  $\pm 20,0$  % relative at the daily Emission Limit Value (ELV).

An Alternative Method to this SRM may be used provided that the user can demonstrate equivalence according to the Technical Specification CEN TS 14793, to the satisfaction of his national accreditation body or law.

This Standard Reference Method has been evaluated during field tests on waste incineration, co-incineration and large combustion installations. It has been validated for sampling periods of 30 min in the range of (0,5 to 2 000) mg/m<sup>3</sup> SO<sub>2</sub> for Ion Chromatography variant and 5 mg/m<sup>3</sup> to 2 000 mg/m<sup>3</sup> SO<sub>2</sub> for Thorin method according to emission limit values laid down in the following Council Directives:

- Council Directive 2001/80/EC on the limitation of emissions of certain pollutants into the air from large combustion plants;
- Council Directive 2000/76/EC on waste incineration plants.

The limit values of EU Directives are expressed in mg SO<sub>2</sub>/m<sup>3</sup>, on dry basis and at the reference conditions of 273 K and 101,3 kPa.

## 2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ENV 13005, *Guide to the expression of uncertainty in measurement*.

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

CEN/TS 14793, *Stationary source emission — Intralaboratory validation procedure for an alternative method compared to a reference method*.

## 3 Terms, definitions, symbols and abbreviations

### 3.1 Terms and definitions

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

#### 3.1.1

##### **absorber**

device in which sulphur oxide is absorbed into an absorption liquid