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Stationary source emissions - Determination of mass concentration of sulphur oxides - Standard reference method

## EESTI STANDARDI EESSÕNA

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English Version

## Stationary source emissions - Determination of mass concentration of sulphur oxides - Standard reference method

Emissions de sources fixes - Détermination de la concentration massique des oxydes de soufre - Méthode de référence normalisée

Emissionen aus stationären Quellen - Bestimmung der Massenkonzentration von Schwefeloxiden - Standardreferenzverfahren

This European Standard was approved by CEN on 26 September 2016.

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**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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## European foreword

This document (EN 14791:2017) has been prepared by Technical Committee CEN/TC 264 "Air quality", the secretariat of which is held by DIN.

This document supersedes EN 14791:2005.

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of an identical text or by endorsement, at the latest by July 2017, and conflicting national standards shall be withdrawn at the latest by July 2017.

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.

Annex G provides details of significant technical changes between this document 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.

## 1 Scope

This European Standard specifies the standard reference method (SRM) for the determination of the sulphuric oxide SO<sub>2</sub> in flue gases emitted to the atmosphere from ducts and stacks. It is based on a sampling system and two analytical principles: ion chromatography and the Thorin method.

This European Standard specifies the performance characteristics to be determined and the performance criteria to be fulfilled by measuring systems based on the measurement method. It applies to periodic monitoring and to the calibration or control of automatic measuring systems (AMS) permanently installed on a stack, for regulatory or other purposes.

This European Standard specifies criteria for demonstration of equivalence of an alternative method to the SRM by application of EN 14793:2017.

This European Standard has been validated 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 mg/m<sup>3</sup> to 2 000 mg/m<sup>3</sup> of SO<sub>2</sub> for an ion-chromatography variant and 5 mg/m<sup>3</sup> to 2 000 mg/m<sup>3</sup> of SO<sub>2</sub> for the Thorin method according to emission limit values laid down in the Directive 2010/75/EU.

NOTE 1 Emission limit values for SO<sub>2</sub> laid down in the Directive 2010/75/EU are in the range of 30 mg/m<sup>3</sup> to 800 mg/m<sup>3</sup>.

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

NOTE 2 The characteristics of installations, the conditions during field tests and the values of repeatability and reproducibility in the field are given in Annex A.

## 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.

prEN 13284-1:2015, *Stationary source emissions – Determination of low range mass concentration of dust – Part 1: Manual gravimetric method*

EN 14793:2017, *Stationary source emission – Demonstration of equivalence of an alternative method with a reference method*

EN 15259:2007, *Air quality - Measurement of stationary source emissions - Requirements for measurement sections and sites and for the measurement objective, plan and report*

EN ISO 14956:2002, *Air quality - Evaluation of the suitability of a measurement procedure by comparison with a required measurement uncertainty (ISO 14956:2002)*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement — Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*