SLOVENSKI STANDARD

SIST-TS CEN/TS 15674:2008

01-marec-2008

Kakovost zraka - Meritve emisij nepremiļnih virov - Smernice za pripravo standardiziranih metod

Air quality - Measurement of stationary source emissions - Guidelines for the elaboration of standardised methods

Luftbeschaffenheit - Messung von Emissionen aus stationären Quellen - Leitlinien zur Erarbeitung von standardisierten Verfahren

Qualité de l'air - Mesure des émissions de sources fixes - Lignes directrices pour l'élaboration de méthodes normalisées

Ta slovenski standard je istoveten z: **CEN/TS 15674:2007**

ICS:

13.040.40

SIST-TS CEN/TS 15674:2008 **en,fr,de**

TECHNICAL SPECIFICATION

SPÉCIFICATION TECHNIQUE

TECHNISCHE SPEZIFIKATION

CEN/TS 15674

October 2007

ICS 13.040.40

English Version

Air quality - Measurement of stationary source emissions - Guidelines for the elaboration of standardised methods

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This Technical Specification (CEN/TS) was approved by CEN on 18 September 2007 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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Ref. No. CEN/TS 15674:2007: E

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Foreword

This document (CEN/TS 15674:2007) has been prepared by Technical Committee CEN/TC 264 “Air quality”, the secretariat of which is held by DIN.

This document has been prepared by WG 19 "Emissions monitoring strategy" of CEN/TC 264 as one of three basic documents on measurements of stationary source emissions consisting of:

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

— CEN/TS 15674, *Air quality — Measurement of stationary source emissions — Guidelines for the elaboration of standardised methods*

— CEN/TS 15675, *Air quality — Measurement of stationary source emissions — Application of EN ISO/IEC 17025:2005 to periodic measurements*

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

Introduction

This European Technical Specification provides guidance to assist with the five years periodical revision of European Standards prepared by CEN/TC 264 and when drafting new standards. It is designed to ensure that the revised standards and new standards, when used with or without reference to accreditation

— are appropriate technical references giving no rise to significant misunderstandings and/or significant differences of interpretation by technical auditors and/or by testing laboratories,

— are consistent one with another regarding definitions and general aspects as well as with the general structure of emission measurement programmes as addressed in EN 15259,

— are consistent one with another in view of combined measurements of several measured components at the same time in the framework of a measurements programme and

— are in accordance and properly linked with CEN/TS 15675 and EN 15259.

It is considered that such significant differences, misunderstandings and/or inconsistencies would, on the one hand, impair the quality and comparability within the European Union of data produced according to those European emission measurement standards and on the other hand, result in unfair competition among European laboratories in the field of emission measurements.

This document can be applicable to other air quality fields.

1 Scope

This document gives recommendations and specifies requirements for the elaboration of standardised reference methods of measurement for the field of stationary source emissions by CEN/TC 264, with or without reference to accreditation. It aims at facilitating in the working groups the elaboration and the harmonisation of the standards produced by CEN/TC 264.

This document aims at ensuring that the specific requirements specified in CEN/TS 15675 are taken on board in the individual measurement standards either directly or by reference to EN 15259.

This document specifies terms and definitions for use in other air quality standards.

This document elaborates the CEN rules as given in CEN/BOSS and in the Internal Regulations Part 3 (PNE rules) in the field of stationary source emissions.

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 13284-1:2001, *Stationary source emissions — Determination of low range mass concentration of dust — Part 1: Manual gravimetric 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*

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

CEN/TS 15675, *Air quality — Measurement of stationary source emissions — Application of EN ISO/IEC 17025:2005 to periodic measurements*

3 General recommendations and requirements

This document applies to the elaboration of new or revised standards for emission measurement methods. It provides in Clause 4 requirements and recommendations specific to each clause of such standards. When a detailed requirement or recommendation applies to several clauses, it is repeated in each clause for sake of clarity.

Each individual measurement standard for stationary source emissions shall clearly specify all requirements specific for this standardised measurement method. It shall make normative or informative reference to EN 15259 for general requirements (e.g. measurement planning and general reporting). It shall also incorporate the relevant requirements of CEN/TS 15675.

Since sampling on site and analysis in the laboratory are two very different activities which are internally or externally performed by distinct teams, it is vital in view of accreditation or of any auditing process that the requirements that are to be fulfilled by the supplier team are easily identified. This should therefore allow to clearly identify the tasks to be audited and concerning each team, especially the team responsible for the whole measurement including signing the overall test report, which is the prime contractor as described in CEN/TS 15675.

Figure 1 illustrates key stages of periodic measurements of emissions from stationary sources and the interrelations between the individual measurement standards and the general document EN 15259.

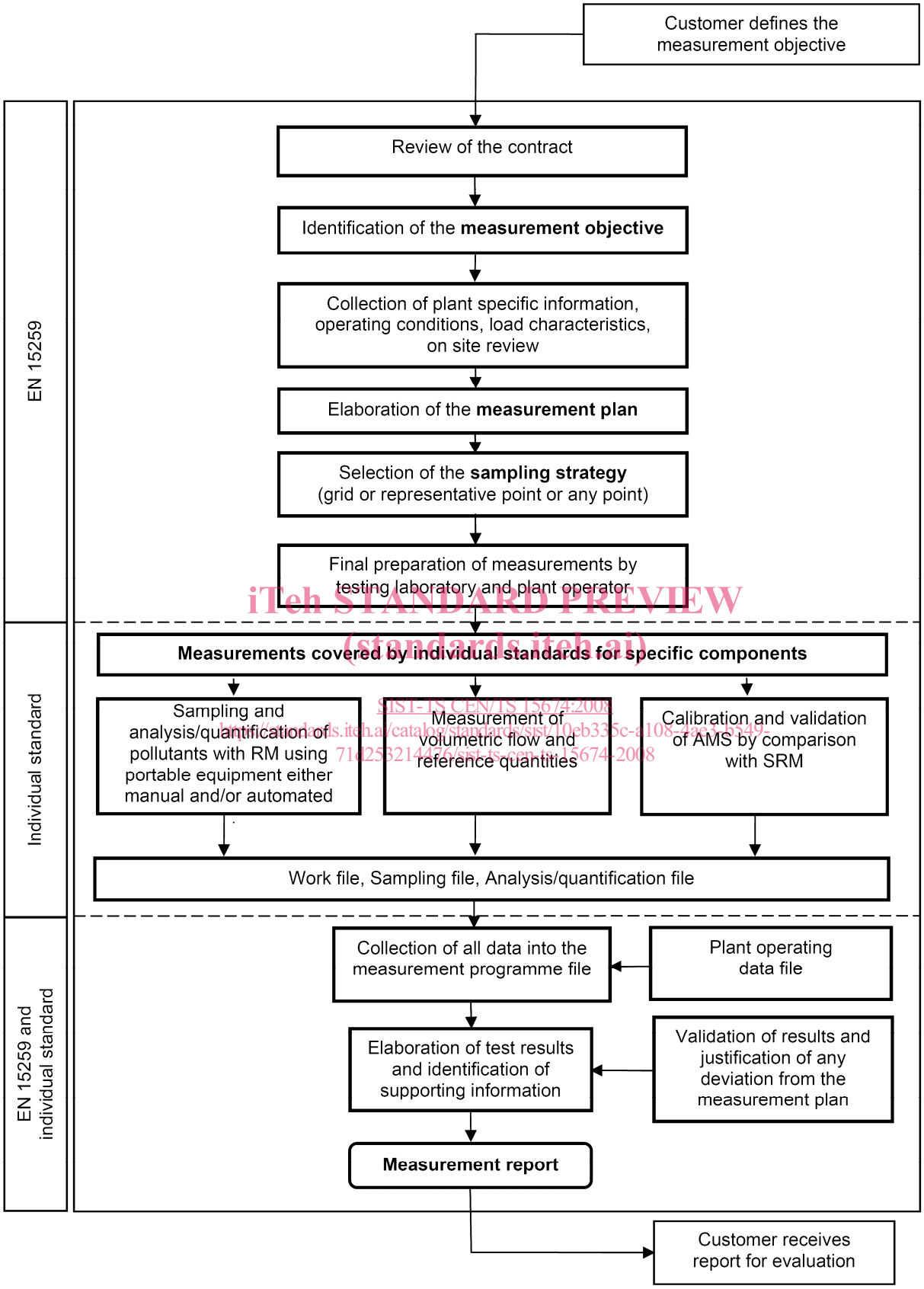

Figure 1 — Illustration of key stages of periodic measurements of emissions from stationary sources

4 Clause specific recommendations and requirements

4.1 Introduction

The introduction being only informative shall not contain requirements. It shall be limited to a text presenting an overview that facilitates the first contact of a reader not acquainted with the method. Such text should be kept reasonably short to complement eventually the scope in view of informative information.

4.2 Scope

The scope shall not specify requirements of the method, but shall express clearly when the standard can be used and when it cannot be used, as well as its limitations, e.g. nature of the measurand, measurement range and influence quantities.

NOTE This can require a statement related to requirements specified in the other clauses of the standard.

A statement on safety shall clarify the extent to which particular aspects are specified in the standard, noting that general prevailing regulations apply that shall not be specified in the standard.

4.3 Normative references

This optional element shall give a list of the documents cited in the standard in such a way as to make them indispensable for the application of the standard.

4.4 Terms and definitions

This is an optional element giving definitions necessary for the understanding of certain terms used in the standard. Different terms and definitions for the same concept should be avoided in standards. Therefore, the terms and definitions listed in Annex A of this document should be used in CEN/TC 264 standards, whenever applicable.

4.5 Principle

This element shall not specify requirements of the method, but shall express clearly the process being applied in the measurement method including its main steps.

NOTE This can require a statement related to requirements specified in the other clauses of the standard.

In case of several options, general minimum requirements are to be considered as well as specific requirements for each option. Those specific requirements shall ensure that the options provide equivalent results.

4.6 Equipment, material and reagent

It is strongly recommended to specify equipment functionally by means of performance criteria so that the laboratories can optimise technically and economically the overall equipment used, taking benefit of the prevailing state of the art, e.g. as gas absorption rate for a washing bottle and not as detailed dimensions.

In this element the requirements of the standard that defines a measurement method shall be clearly specified. Relevance of each minimum requirement for either the sampler or the analyst or both shall be indicated as well as the interface requirements between sampler activities and the analyst activities. This shall address the management activities of the team responsible of the whole measurement and that signs the overall report (the prime contractor as described in CEN/TS 15675). Furthermore, this shall be made in a consistent way with the general requirements specified in EN 15259.

4.7 Operating procedure

4.7.1 General

The sampler activities in the field shall be clearly distinguished from the analyst activities in the laboratory. Their interface and inter-relations shall be clearly specified. This shall address the management activities of the team responsible of the whole measurement and that signs the overall report (the prime contractor as described in CEN/TS 15675).

All the different steps of the measurement process shall be addressed. In general a periodic measurement in the field of stationary source emission consists of seven steps: measurement planning, taking of the sample, field collection, transport and storage, laboratory preparation and extraction, analysis/quantification, measurement report. In case of instrumental periodic measurement providing results in the field, the main seven steps are generally: measurement planning, taking of the sample, calibration before measurement, transport and storage of the instruments, calibration after measurement, analysis/quantification and measurement report.

NOTE 1 In the first generation of measurement standards for stationary source emission as developed by CEN/TC 264, the measurement plan issue has been generally addressed by reference to dust standard specifying the grid method. In some cases specific requirement were specified. In view of the coming revision it was found more appropriate to refer to EN 15259, since among other goals this standard aims at combining different individual measurements to build the overall testing programme.

In case of several options, general minimum requirements are to be considered as well as specific requirements for each option. Those specific requirements shall ensure that the options provide equivalent results.

NOTE 2 The following requirements are aiming at securing consistent operating conditions which are necessary to be able to perform parallel measurements of several measured components, e.g. HCl, dust and mercury. They are also aiming at providing several consistent quality criteria for the different emission measurements, e.g. field blank procedure and value or leak check procedure and value.

In this element the requirements of the standard that defines a measurement method shall be clearly specified. Relevance of each minimum requirement for either the sampler or the analyst or both shall be indicated as well as the interface requirements between sampler activities and the analyst activities. This shall address the management activities of the team responsible of the whole measurement and that signs the overall report. Furthermore, this shall be made in a consistent way with the general requirements specified in EN 15259.

4.7.2 Leak check

The leak check should be carried out in accordance with 8.4 a) of EN 13284-1:2001 by the following procedure:

> "Assemble the sampling equipment, and check for possible leaks by sealing the nozzle and starting the suction device. The leak flow at the maximal under pressure that could be reached during sampling shall be below 2 % of the normal flow rate."

NOTE 1 This leak check is dedicated at checking that the leak is minimised and kept below an acceptable limit.

NOTE 2 During sampling, a leak change can be monitored by measuring continuously the concentration of a relevant gas component (CO_2, O_2 etc.) directly in the duct and downstream the sampling train. Any detectable difference between those concentrations indicates a leak in the sampling equipment parts located outside the duct. This leak is then be investigated and rectified.

4.7.3 Field blank

This procedure is used to ensure that no significant contamination has occurred during all the steps of the measurement.

NOTE 1 This includes for instance the equipment preparation in laboratory, its transport and installation in the field as well as the subsequent analytical work in the laboratory.

For this purpose specify the frequency and handling of field blank as follows:

> "A field blank procedure including the analytical step shall be performed at least before each measurement series or at least once a day, following the whole measurement procedure specified in this standard and including the sampling procedure without the suction steps, i.e. without starting and operating the suction device.
>
> If equipment in contact with the measured substance is cleaned and reused in the field, a field blank shall also be taken before each measurement series. The blank taken after a measurement series may be used as the blank taken before the following measurement series.
>
> In the case when equipment in contact with the measured component is not cleaned for reuse in the field, i.e. only prepared in laboratory or rinsed at the end of a series, if two or several measurement series are performed with equipment prepared at the same time and according to the same procedure, and if the measurements are performed on the same industrial process or on several lines of the same industrial process, then a single field blank shall be taken."

The field blank criteria are given in each individual standard as stipulated in 4.8.2 and 4.9.2.

NOTE 2 This leads to an estimation of the dispersion of results related to the whole procedure for a near zero concentration.

4.7.4 Filtration temperature

In the field of stationary source emission several individual measurements are to be performed at the same time. It is therefore wise to harmonise the operating conditions so that a combined sampling train can be arranged and more important that the different measurands are defined on the same basis, especially regarding the particulate/gaseous aspects.

For this purpose specify the filtration temperature as follows:

> "In the case when dusts and other air pollutants are measured simultaneously, the parts of the sampling train to be weighed should be
>
> 1) conditioned at 180 °C before sampling,
>
> 2) set at a temperature of 160 °C ± 10 K during sampling and
>
> 3) conditioned at 160 °C after sampling."

NOTE These conditions have been selected as practical operating points that match reasonably the specific features of the different concerned standards.

This section is designed to ensure a harmonisation between individual standards. However, the requirements of individual standards either new or revised prevail, e.g. for PCCD/PCDF measurements.

4.7.5 Rinsing

In the field of stationary source emissions several individual measurements are to be performed at the same time. It is therefore wise to harmonise the operating conditions so that a combined sampling train can be arranged and more important that the different measurands are defined on the same basis, especially regarding the particulate/gaseous aspects.

For this purpose specify rinsing as follows: