

## საქართველოს სტანდარტი

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შეჩერებული მყარი ნაწილაკების PM10 ან PM2,5 მასის კონცენტრაციის  
განსასაზღვრად

სსტ ენ 12341:2023/2024

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English Version

**Ambient air - Standard gravimetric measurement method  
for the determination of the PM10 or PM2,5 mass  
concentration of suspended particulate matter**

Air ambient - Méthode normalisée de mesurage  
gravimétrique pour la détermination de la  
concentration massique MP10 ou MP2,5 de matière  
particulaire en suspension

Außenluft - Gravimetrisches Standardmessverfahren  
für die Bestimmung der PM10- oder PM2,5-  
Massenkonzentration des Schwebstaubes

This European Standard was approved by CEN on 24 April 2023.

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 CEN-CENELEC 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 CEN-CENELEC Management Centre has the same status as the official versions.

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საინფორმაციო ნაწილი. სრული ტექსტის სახანაგად შეიძინეთ სტანდარტი.

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## European foreword

This document (EN 12341:2023) 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of an identical text or by endorsement, at the latest by February 2024, and conflicting national standards shall be withdrawn at the latest by February 2024.

This document supersedes EN 12341:2014.

Technical modifications which have been made in comparison with the previous edition are summarized in Annex I.

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).

For relationship with EU Directive(s), see the introduction.

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

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

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## Introduction

For air quality across the European Union to be assessed on a consistent basis, Member States need to employ standard measurement techniques and procedures. The aim of this document is to present a harmonized methodology for monitoring the mass concentrations of suspended particulate matter (PM<sub>10</sub> and PM<sub>2,5</sub> respectively) in ambient air, following Directive 2008/50/EC on ambient air quality and cleaner air for Europe [1] which sets the parameters specific to the assessment of ambient concentration levels of particulate matter.

NOTE In principle, the methodology described in this document may also be used for measurement of mass concentrations of other PM fractions such as PM<sub>1</sub>. However, this document does not describe standardized sampling inlets for such fractions.

The European Standard method described in this document is focused primarily on harmonization and improvement of the data quality of measurement methods used in monitoring networks with regard to avoiding unnecessary discontinuities with historical data. It is a method that is suited for practical use in routine monitoring, but not necessarily the method with the highest metrological quality.

There are no reference materials currently available to provide traceability for PM<sub>10</sub> or PM<sub>2,5</sub> measurements in ambient air. Therefore, the standard method defines the measured quantity by convention, specifically by the sample inlet design and associated operational parameters covering the whole measurement process. This document contains:

- a description of a manual gravimetric standard measurement method for PM<sub>10</sub> or PM<sub>2,5</sub> using sequential samplers or single-filter samplers;
- a summary of performance requirements of the method, together with associated type testing requirements for the sampler;
- requirements for suitability testing of facilities and equipment on initial application of the method;
- requirements for ongoing quality assurance / quality control when applying the method in the field;
- the assessment of measurement uncertainty of the results of this document method;
- criteria and test methods for the evaluation of the suitability of filters for application using this method.

The performance characteristics and requirements described in this document were partly determined in different comparative and validation trials. The trials were sponsored by the European Commission and the European Free Trade Association.

The requirements of this document are targeted firstly towards obtaining optimum results for the measurement of mass concentrations of PM<sub>10</sub> or PM<sub>2,5</sub>.

However, the filters collected for the purpose of determining the mass concentrations of PM<sub>10</sub> or PM<sub>2,5</sub> can be used for further speciation, e.g. for the determination of concentrations of:

- heavy metals and polycyclic aromatic hydrocarbons (see EN 14902 [6], EN 15549 [7]) and CEN/TS 16645 [20] in conformity with Directive 2004/107/EC [8], as amended by Directive 2015/1480/EU [26].
- constituents of PM<sub>2,5</sub> (see EN 16909 [9] and EN 16913 [10]) to be used for source apportionment as required by Directive 2008/50/EC.

Additional requirements might have to be considered for those purposes (e.g. blank values of chemical constituents).