

**SLOVENSKI STANDARD**  
**SIST EN ISO 29463-2:2018****01-december-2018****Nadomešča:**  
**SIST EN 1822-2:2010**

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**Zelo učinkoviti filtri in filtrirno sredstvo za odstranjevanje delcev iz zraka - 2. del:  
Proizvodnja aerosola, merilna oprema in statistika štetja delcev (ISO 29463-2:2011)**High-efficiency filters and filter media for removing particles in air - Part 2: Aerosol  
production, measuring equipment and particle-counting statistics (ISO 29463-2:2011)Schwebstofffilter und Filtermedien zur Abscheidung von Partikeln aus der Luft - Teil 2:  
Aerosolherzeugung, Messgeräte und Partikelzählstatistik (ISO 29463-2:2011)Filtres à haut rendement et filtres pour l'élimination des particules dans l'air - Partie 2:  
Production d'aérosol, équipement de mesure et statistique de comptage de particules  
(ISO 29463-2:2011)**Ta slovenski standard je istoveten z: EN ISO 29463-2:2018****ICS:**

13.040.99	Drugi standardi v zvezi s kakovostjo zraka	Other standards related to air quality
91.140.30	Prezračevalni in klimatski sistemi	Ventilation and air- conditioning systems

**SIST EN ISO 29463-2:2018****en,fr,de**

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EUROPEAN STANDARD

EN ISO 29463-2

NORME EUROPÉENNE

EUROPÄISCHE NORM

October 2018

ICS 91.140.30

Supersedes EN 1822-2:2009

English Version

## High-efficiency filters and filter media for removing particles in air - Part 2: Aerosol production, measuring equipment and particle-counting statistics (ISO 29463-2:2011)

Filtres à haut rendement et filtres pour l'élimination des particules dans l'air - Partie 2: Production d'aérosol, équipement de mesure et statistique de comptage de particules (ISO 29463-2:2011)

Schwebstofffilter und Filtermedien zur Abscheidung von Partikeln aus der Luft - Teil 2: Aerosolerzeugung, Messgeräte und Partikelzählstatistik (ISO 29463-2:2011)

This European Standard was approved by CEN on 6 May 2018.

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.

CEN members are the national standards bodies of 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 United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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## European foreword

The text of ISO 29463-2:2011 has been prepared by Technical Committee ISO/TC 142 "Cleaning equipment for air and other gases" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 29463-2:2018 by Technical Committee CEN/TC 195 "Air filters for general air cleaning" the secretariat of which is held by UNI.

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 April 2019, and conflicting national standards shall be withdrawn at the latest by April 2019.

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.

This document supersedes EN 1822-2:2009.

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.

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### Endorsement notice

The text of ISO 29463-2:2011 has been approved by CEN as EN ISO 29463-2:2018 without any modification.

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# INTERNATIONAL STANDARD

**ISO**  
**29463-2**

First edition  
2011-10-15

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## High-efficiency filters and filter media for removing particles in air —

Part 2:

### **Aerosol production, measuring equipment and particle-counting statistics**

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*Filtres à haut rendement et filtres pour l'élimination des particules dans  
l'air —*

*Partie 2: Production d'aérosol, équipement de mesure et statistique de  
comptage de particules*

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## ISO 29463-2:2011(E)

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 29463-2 was prepared by Technical Committee ISO/TC 142, *Cleaning equipment for air and other gases*.

ISO 29463 consists of the following parts, under the general title *High-efficiency filters and filter media for removing particles in air*.

- *Part 1: Classification, performance, testing and marking*
- *Part 2: Aerosol production, measuring equipment, particle-counting statistics*
- *Part 3: Testing flat sheet filter media*
- *Part 4: Test method for determining leakage of filter element — Scan method*
- *Part 5: Test method for filter elements*

## Introduction

ISO 29463 (all parts) is derived from EN 1822 (all parts) with extensive changes to meet the requests from non-EU p-members. It contains requirements, fundamental principles of testing and the marking for high-efficiency particulate air filters with efficiencies from 95 % to 99,999 995 % that can be used for classifying filters in general or for specific use by agreement between users and suppliers.

ISO 29463 (all parts) establishes a procedure for the determination of the efficiency of all filters on the basis of a particle counting method using a liquid (or alternatively a solid) test aerosol, and allows a standardized classification of these filters in terms of their efficiency, both local and overall efficiency, which actually covers most requirements of different applications. The difference between ISO 29463 (all parts) and other national standards lies in the technique used for the determination of the overall efficiency. Instead of mass relationships or total concentrations, this technique is based on particle counting at the most penetrating particle size (MPPS), which, for micro-glass filter mediums, is usually in the range of 0,12 µm to 0,25 µm. This method also allows testing ultra-low penetration air filters, which was not possible with the previous test methods because of their inadequate sensitivity. For membrane filter media, separate rules apply, and are described in ISO 29463-5:2011, Annex B. Although no equivalent test procedures for testing filters with charged media is prescribed, a method for dealing with these types of filters is described in ISO 29463-5:2011, Annex C. Specific requirements for test method, frequency, and reporting requirements can be modified by agreement between supplier and customer. For lower efficiency filters (group H, as described below), alternate leak test methods noted in ISO 29463-4:2011, Annex A, can be used by specific agreement between users and suppliers, but only if the use of these other methods is clearly designated in the filter markings as described in ISO 29463-4:2011, Annex A.

There are differences between ISO 29463 (all parts) and other normative practices common in several countries. For example, many of these rely on total aerosol concentrations rather than individual particles. For information, a brief summary of these methods and their reference standards are provided in ISO 29463-5:2011, Annex A.

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