

**Water conditioning equipment inside  
buildings - Mechanical filters - Part 2:  
Particle rating 1  $\mu\text{m}$  to less than 80  $\mu\text{m}$ ;  
Requirements for performance, safety  
and testing KONSOLIDEERITUD TEKST**

Water conditioning equipment inside buildings -  
Mechanical filters - Part 2: Particle rating 1  $\mu\text{m}$  to  
less than 80  $\mu\text{m}$ ; Requirements for performance,  
safety and testing CONSOLIDATED TEXT

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13443-2:2005+A1:2007 sisaldab Euroopa standardi EN 13443-2:2005+A1:2007 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 21.08.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13443-2:2005+A1:2007 consists of the English text of the European standard EN 13443-2:2005+A1:2007.</p> <p>This document is endorsed on 21.08.2007 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>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<p><b>Käsitlusala:</b> This document specifies requirements relating to the construction, performance and methods of testing for mechanical filters for the removal of suspended matter in drinking water installations inside buildings. It applies to filters with a filtration rating from 1 µm up to less than 80 µm and which are intended for use in systems with a minimum pressure rating of PN 6, connections between DN 15 and DN 100 and service temperature of less than 30 °C. This document is applicable to back-washable filters, integral filters and those designed for replaceable cartridges. It only concerns units that are permanently connected to the mains supply at point of entry or point of use. Part 1 of this standard (EN 13443-1) is a separate document and deals with filters with a particle rating between 80 µm and 150 µm.</p>	<p><b>Scope:</b> This document specifies requirements relating to the construction, performance and methods of testing for mechanical filters for the removal of suspended matter in drinking water installations inside buildings. It applies to filters with a filtration rating from 1 µm up to less than 80 µm and which are intended for use in systems with a minimum pressure rating of PN 6, connections between DN 15 and DN 100 and service temperature of less than 30 °C. This document is applicable to back-washable filters, integral filters and those designed for replaceable cartridges. It only concerns units that are permanently connected to the mains supply at point of entry or point of use. Part 1 of this standard (EN 13443-1) is a separate document and deals with filters with a particle rating between 80 µm and 150 µm.</p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**ICS** 13.060.20, 91.140.60

**Võtmesõnad:** separation, separation methods, solids, specification (approval), specifications, testing, untreated water, water, water practice, water purification, water quality, water supply, water supply (buildings), water supply installations, water testing, water treatment

English Version

Water conditioning equipment inside buildings - Mechanical  
filters - Part 2: Particle rating 1  $\mu\text{m}$  to less than 80  $\mu\text{m}$  -  
Requirements for performance, safety and testing

Appareils de traitement d'eau à l'intérieur des bâtiments -  
Filtres mécaniques - Partie 2: Particules de taille 1  $\mu\text{m}$  à 80  
 $\mu\text{m}$  - Exigences de performances, de sécurité et essais

Anlagen zur Behandlung von Trinkwasser innerhalb von  
Gebäuden - Mechanisch wirkende Filter - Teil 2:  
Filterfeinheit 1  $\mu\text{m}$  bis 80  $\mu\text{m}$  - Anforderungen an  
Ausführung, Sicherheit und Prüfung

This European Standard was approved by CEN on 24 December 2004 and includes Amendment 1 approved by CEN on 10 May 2007.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.




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

Management Centre: rue de Stassart, 36 B-1050 Brussels

## Contents

Page

Foreword.....	3
1 Scope .....	4
2 Normative references .....	4
3 Terms and definitions .....	4
4 Symbols and abbreviations .....	8
5 Design requirements .....	9
6 Performance requirements .....	10
7 Test procedures .....	11
8 Technical documents, labelling and marking .....	38
Annex A (informative) Typical test reports .....	40
Annex B (informative) Typical graphical representation of test results .....	46
Annex C (normative) Integrity inspection and measurement of first bubble point.....	50
Annex D (normative)  Installation, operation and maintenance .....	53
Bibliography .....	57

## Foreword

This document (EN 13443-2:2005+A1:2007) has been prepared by Technical Committee CEN/TC 164 "Water supply", the secretariat of which is held by AFNOR.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2007 and conflicting national standards shall be withdrawn at the latest by December 2007.

This document includes Amendment 1, approved by CEN on 2007-05-10.

This document supersedes EN 13443-2:2005.

The start and finish of text introduced or altered by amendment is indicated in the text by tags  $\boxed{A_1}$   $\boxed{A_1}$ .

- a) this document provides no information as to whether the product may be used without restriction in any of the Member States.
- b) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulation concerning the use and/or the characteristics of this product remain in force.

This is the second part of the two-part standard for mechanical filters. Part 1 is concerned with mechanical filters with a particle size rating from 80  $\mu\text{m}$  to 150  $\mu\text{m}$ .

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, 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 United Kingdom.

## 1 Scope

This document specifies requirements relating to the construction, performance and methods of testing for mechanical filters for the removal of suspended matter in drinking water installations inside buildings. It applies to filters with a filtration rating from 1  $\mu\text{m}$  up to less than 80  $\mu\text{m}$  and which are intended for use in systems with a minimum pressure rating of PN 6, connections between DN 15 and DN 100 and service temperature of less than 30 °C.

This document is applicable to back-washable filters, integral filters and those designed for replaceable cartridges. It only concerns units that are permanently connected to the mains supply at point of entry or point of use.

Part 1 of this standard (EN 13443-1) is a separate document and deals with filters with a particle rating between 80  $\mu\text{m}$  and 150  $\mu\text{m}$ .

## 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 872, *Water quality — Determination of suspended solids — Method by filtration through glass fibre filters*

EN 1717, *Protection against pollution of potable water in water installations and general requirements of devices to prevent pollution by backflow*

EN 13443-1:2002, *Water conditioning equipment inside buildings — Mechanical filters — Part 1: Particle rating 80  $\mu\text{m}$  to 150  $\mu\text{m}$  — Requirements for performances, safety and testing*

ISO 304, *Surface active agents — Determination of surface tension by drawing up liquid films*

ISO 1219-1, *Fluid power systems and components — Graphic symbols and circuit diagrams — Part 1: Graphic symbols*

ISO 4021, *Hydraulic fluid power — Particulate contamination analysis — Extraction of fluid samples from lines of an operating system*

ISO 12103-1, *Road vehicles — Test dust for filter evaluation — Part 1: Arizona test dust*

## 3 Terms and definitions

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

### 3.1

#### **average pore diameter (DMP)**

value, in  $\mu\text{m}$ , of the pore diameter which corresponds to the mode of the relative frequency of pore diameter distribution of a filter media determined by air porosimetry

### 3.2

#### **backwashable filter**

filter unit which is equipped with facilities, manual or automatic, to enable the periodic, in situ cleaning of the filter element by reversing the flow of water through the element

### 3.3

#### **bubble point**

lowest air pressure at which a stream of bubbles appears at a point of the filter media surface when immersed under air pressure in a wetting liquid in accordance with Annex C

## 4