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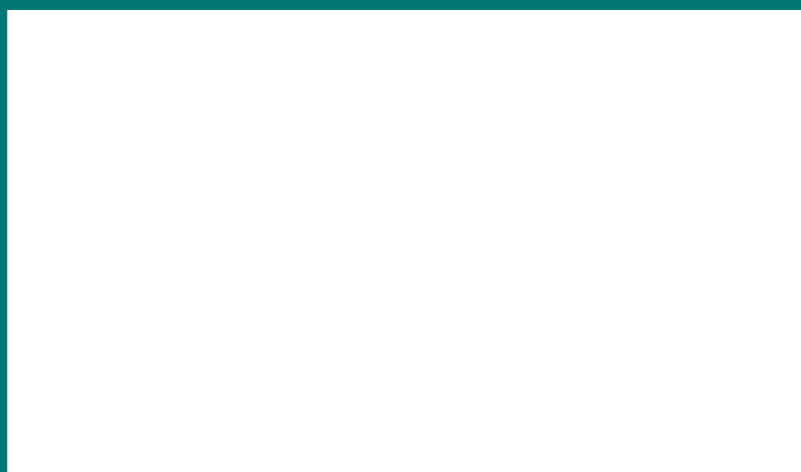
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Vattenförsörjning – Invändig utrustning – Mekaniska filter – Del 1: Partikelstorlek 80 µm-150 µm – Utförandekrav, säkerhet och provning

Water conditioning equipment inside buildings – Mechanical filters – Part 1: Particle rating 80 µm to 150 µm – Requirements for performances, safety and testing



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Denna standard ersätter SS-EN 13443-1, utgåva 1.

The European Standard EN 13443-1:2002+A1:2007 has the status of a Swedish Standard. This document contains the official English version of EN 13443-1:2002+A1:2007.

This standard supersedes the Swedish Standard SS-EN 13443-1, edition 1.

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 13443-1:2002+A1

September 2007

ICS 13.060.20; 91.140.60

Supersedes EN 13443-1:2002

English Version

Water conditioning equipment inside buildings - Mechanical filters - Part 1: Particle rating 80 µm to 150 µm - Requirements for performances, safety and testing

Appareils de traitement d'eau à l'intérieur des bâtiments -
Filtres mécaniques - Partie 1: Particules de dimension
comprise entre 80 µm et 150 µm - Exigences de
performances et de sécurité, essais

Anlagen zur Behandlung von Trinkwasser innerhalb von
Gebäuden - Mechanisch wirkende Filter - Teil 1:
Filterfeinheit 80 µm bis 150 µm - Anforderungen an
Ausführung, Sicherheit und Prüfung

This European Standard was approved by CEN on 23 October 2002 and includes Amendment 1 approved by CEN on 9 August 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.

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Foreword

This document (EN 13443-1:2007+A1:2007) has been prepared by Technical Committee CEN/TC 164 "Water supply", the secretariat of which is held by AFNOR.

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 March 2008, and conflicting national standards shall be withdrawn at the latest by March 2008.

This document supersedes EN 13443-1:2002.

This document includes Amendment 1, approved by CEN on 2007-08-09.

The start and finish of text introduced or altered by amendment is indicated in the text by tags $\boxed{A1}$ $\boxed{A1}$.

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 the United Kingdom.

Introduction

In respect of potential adverse effects on the quality of water intended for human consumption, caused by the product covered by this standard:

- 1) this standard provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA;
- 2) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

1 Scope

Part 1 of this European Standard applies to mechanical filters for drinking water installations inside buildings, of nominal size from DN 15 to DN 100, minimum nominal pressure PN10, particle rating of 80 µm to 150 µm, and ^{A1} maximum ^{A1} design temperature of 30 °C. It specifies requirements relating to the construction and mode of operation of filters and describes relevant methods of testing. It only concerns units which are permanently connected to the mains supply at the point of entry into the building.

Part 2 of this European Standard (^{A1} EN 13443-2:2005+A1 ^{A1}) is a separate document and deals with filters with a particle size limit less than 80 µm.

2 Normative references

^{A1} 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. ^{A1}

EN 1333, *Flanges and their joints - Pipework components - Definition and selection of PN*

EN 1567, *Building valves - Water pressure reducing valves and combination water pressure reducing valves - Requirements and tests*

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

^{A1} EN 15161, *Water conditioning equipment inside buildings — Installation, operation, maintenance and repair* ^{A1}

EN ISO 3822-3, *Acoustics - Laboratory tests on noise emission from appliances and equipment used in water supply installations - Part 3: Mounting and operating conditions for in-line valves and appliances (ISO 3822-3:1997)*

EN ISO 6509, *Corrosion of metals and alloys - Determination of dezincification resistance of brass (ISO 6509:1981)*

^{A1} *deleted text* ^{A1}

^{A1} ISO 2591-1, *Test sieving — Part 1: Methods using test sieves of woven wire cloth and perforated metal plate*

ISO 9276-1, *Representation of results of particle size analysis — Part 1: Graphical representation*

ISO 13320-1, *Particle size analysis — Laser diffraction methods — Part 1: General principles* ^{A1}

3 Terms and definitions

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

3.1

^{A1} **drinking water** ^{A1}

water intended for human consumption as defined in Directive 98/83/EC ^{A1} (see Annex A) ^{A1}

3.2

^{A1} **mechanical filter** ^{A1}

^{A1} appliance ^{A1} designed to remove undissolved substances from water, down to a specified particle size

3.3

filter element

part of a filter designed to ensure the retention of particles

EN 13443-1:2002+A1:2007 (E)**3.4****grade of filtration**

ability of a filter to retain particles and suspended matter of a given size range irrespective of the nature of the material used in the filter element, defined by the maximum and minimum filter particle rating

3.5**minimum particle rating**

number determining the particle size, in μm , of a material 90 % by mass of which is able to pass through the filter under test conditions

3.6**maximum particle rating**

number determining the particle size, in μm , of a material 10 % by mass of which is able to pass through the filter under test conditions

3.7**filter surface velocity**

flow rate divided by the filter surface area, expressed in $\text{m}^3/(\text{h cm}^2)$

3.8**nominal flow rate**

clean filter flow rate at which either the pressure drop does not exceed a value of 50 kPa (0,5 bar), or the filter surface velocity does not exceed the maximum specified value, whichever is lower

4 Classification**4.1 Principle**

Mechanical filters shall be designated by:

- nominal size DN;
- end connections;
- filter type;
- nominal pressure PN.

The designation shall be clearly identified on the manufacturer's rating plate or in the instruction manual. Examples are given in **A1** Annex A **A1**.

4.2 Nominal size (DN)

The nominal size DN shall correspond to the flow rates in Table 2. The inlet connection of the filter may be DN or one size larger or one size smaller than the nominal size DN. In the case of flange connections the nominal size DN is determined by the DN of the inlet connection.

4.3 **A1 End connections **A1****

Examples of end connections are shown in **A1** Annex A **A1**. Combinations of two kinds of connections are possible.

4.4 **A1 Filter type **A1****

Filters conforming to this standard shall be presented as one of the following types:

- filters requiring single use filter elements;

— backwashing filters filter elements cleaned by backwashing (without any dismantling).

4.5 **A1** Nominal pressure (PN) **A1**

The nominal pressure PN shall correspond to EN 1333.

5 **A1** Materials (chemical and hygienic behaviour of materials) **A1**

The selection of materials shall be the responsibility of the manufacturer, provided that the complete filter satisfies the requirements of EN 1567.

NOTE The materials and coatings used should not contaminate or change the drinking water, when in normal or accidental contact up to the maximum designed temperature.

The requirements , with regard to the effects of materials on drinking water quality, are specified in national regulations.

The manufacturer shall state in his technical literature what materials and coatings are used. The materials, in particular copper alloys, shall conform to relevant national standards or recommendations. These references shall be stated.

Copper-zinc alloys containing more than 10 % zinc are subject to dezincification when submitted to water capable of dezincification. In countries where the use of products made of dezincification resistant material is required, the product have to guarantee a dezincification depth less than 200 µm in any direction. They have to be tested and marked in accordance with EN ISO 6509 and have to be marked in compliance with the indications under clause 9 of the present standard.

6 General design requirements

6.1 Backwashable filters

Backwashable filters shall be able to be cleaned without the aid of tools. No substances shall be allowed to penetrate into the drinking water supply as a result of the cleaning operation. After completion of backwashing, the original grade of filtration and pressure drop shall be recovered.

Backwashable filters shall be provided with a backwash water outlet, conforming to EN 1717.

It shall be possible to clean the filter mounted in any of the positions specified by the manufacturer with no interruption of filtered water supply during backwashing.

6.2 Single-use filters

Single use filters shall be designed in such a way that the filter elements can be replaced without any risk of contamination of the drinking water. It shall be possible to replace the filter mounted in any of the positions specified by the manufacturer.

Any tools used in this process shall not come into contact with drinking water and shall be provided by the manufacturer. If specific tools are necessary they shall be supplied by the manufacturer.

Replacement filter elements shall be single packaged to prevent contamination from outside.

6.3 Thermal stability

Filters shall be designed to withstand room and water temperatures of at least 30°C.