SLOVENSKI STANDARD
SIST EN 15795:2010

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Proizvodi, ki se uporabljajo za pripravo pitne vode - Naravni, neekspandirani aluminijev silikat

Products used for treatment of water intended for human consumption - Natural unexpanded aluminosilicates

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Natürliche, nicht expandierte Aluminiumsilikate

Produits utilisés pour le traitement de l'eau destinée à la consommation humaine - Aluminosilicates naturels non expansés

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13.060.20	Pitna voda	Drinking water
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EUROPEAN STANDARD

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English Version

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

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Contents

Foreword

This document (EN 15795:2010) 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of an identical text or by endorsement, at the latest by March 2011, and conflicting national standards shall be withdrawn at the latest by March 2011.

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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.

NOTE Conformity with the standard does not confer or imply acceptance or approval of the product in any of the Member States of the EU or EFTA. The use of the product covered by this European Standard is subject to regulation or control by National Authorities.

1 Scope

This European Standard is applicable to natural unexpanded aluminosilicates used for treatment of water intended for human consumption. It describes the characteristics of natural unexpanded aluminosilicates and specifies the requirements and the corresponding test methods for natural unexpanded aluminosilicates and gives information on their use in water treatment.

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 12901:1999, *Products used for treatment of water intended for human consumption — Inorganic supporting and filtering materials — Definitions*

EN 12902, *Products used for treatment of water intended for human consumption — Inorganic supporting and filtering materials — Methods of test*

3 Terms, definitions and symbols

For the purpose of this document, the terms, definitions and symbols given in EN 12901:1999 apply.

4 Description

4.1 Identification

4.1.1 Chemical name

Aluminium silicate.

4.1.2 Synonym and common names

Basalt, Volcanic sand, Phonolith.

4.1.3 Chemical formula

$Al_xSi_yO_z$.

4.2 Commercial form

Natural unexpanded aluminosilicates according to this standard are available in different particle size ranges.

5 Physical properties

5.1 Appearance

The product is a hard, light grey to dark grey granular material.

The structure is crystalline with a rough surface. The particle shape is spherical or cubic depending mainly on the origin and manufacturing procedure (quarrying or dredging, or crushing). The shape influences filtration performance, see A.4.

The product shall be generally homogeneous and shall be visibly free from impurities and contamination.

5.2 Particle size distribution

The particle size distribution shall be determined on samples taken at the point of manufacture using the method of test given in EN 12902.

NOTE 1 The particle size can decrease during transportation and handling.

The particle size distribution shall be described by either:

a) 1) effective size: (d_{10}) with a permitted tolerance of ± 5 %;

2) uniformity coefficient: (U) shall be less than 1,5;

3) minimum size: (d_1) with a permitted tolerance of ± 5 %;

or:

b) 1) by particle size range and by mass fraction of oversize and undersize particles according to application.

2) The maximum contents of oversize and undersize shall be a mass fraction of 5 % for application of the product as a filtration layer in multi media filters and a mass fraction of 10 % for use in single media filters. For use as a support layer, maximum mass fractions of oversize and undersize of 15 % are acceptable. See A.2.3 for examples of available particle sizes that are used.

NOTE 2 Other values can be necessary for certain applications.

5.3 Density

5.3.1 Bulk density loose

The bulk density loose shall be in the range of 1 250 kg/m^3 to 1 550 kg/m^3.

5.3.2 Bulk density packed

The bulk density packed shall be in the range of 1 400 kg/m^3 to 1 750 kg/m^3.

6 Chemical properties

This European Standard specifies the minimum purity requirements for natural unexpanded aluminosilicates used for the treatment of water intended for human consumption. Limits are given for impurities commonly present in the product. Depending on the raw material and the manufacturing process other impurities may be present and, if so, this shall be notified to the user and when necessary to relevant authorities.

NOTE 1 Users of this product should check the national regulations in order to clarify whether it is of appropriate purity for treatment of water intended for human consumption, taking into account raw water quality, contents of other impurities and additives used in the products not stated in the product standard.

Limits have been given for impurities and chemical parameters where these are likely to be present in significant quantities from the current production process and raw materials. If the production process or raw materials lead to significant quantities of impurities, by-products or additives being present, this shall be notified to the user.

The composition of the commercial product shall conform to the requirements specified in Table 1.

Table 1 — Composition of commercial product

Parameter		Limit in mass fraction %
Acid-soluble material	max.	10

NOTE 2 The exact composition does not influence filtration properties, but is given in A.2.1.

NOTE 3 After filling, washing and commissioning of a filter system producing drinking water, natural unexpanded aluminosilicates should not increase the concentrations of chemical parameters (see [1]).

NOTE 4 Water extractable substances, determined in accordance with the method for granular materials given in EN 12902, can be used to estimate the leaching of the chemicals specified in EN 12902.

7 Test methods

7.1 Sampling

Prepare the laboratory sample(s) required by the relevant procedures described in EN 12902.

7.2 Analysis

7.2.1 Particle size distribution

The particle size distribution shall be determined in accordance with EN 12902.

7.2.2 Bulk density loose

The bulk density loose shall be determined in accordance with EN 12902.

7.2.3 Bulk density packed

The bulk density packed shall be determined in accordance with EN 12902.

7.2.4 Acid-soluble material

The content of acid-soluble material shall be determined in accordance with EN 12902.

8 Labelling, transportation and storage

8.1 Means of delivery

Natural unexpanded aluminosilicates shall be delivered in bags, semi-bulk containers or bulk.