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**Proizvodi, ki se uporabljajo za pripravo pitne vode - Ekspandirani aluminijev silikat**

Products used for treatment of water intended for human consumption - Expanded aluminosilicate

Produkte zur Aufbereitung von Wasser für den menschlichen Gebrauch - Expandierte Aluminiumsilikate

Produits utilisés pour le traitement de l'eau destinée à la consommation humaine - Aluminosilicate expansé

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN 12905

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ICS 71.100.80

English version

Products used for treatment of water intended for human  
consumption - Expanded aluminosilicate

Produits utilisés pour le traitement de l'eau destinée à la  
consommation humaine - Aluminosilicate expansé

Produkte zur Aufbereitung von Wasser für den  
menschlichen Gebrauch - Expandierte Aluminiumsilikate

This European Standard was approved by CEN on 16 July 1999.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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## Foreword

This European Standard 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of an identical text or by endorsement, at the latest by February 2000, and conflicting national standards shall be withdrawn at the latest by February 2000.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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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.

## 1 Scope

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

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 12901, *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 Definition and symbols

For the purpose of this standard, the definitions and symbols given in EN 12901 apply.

## 4 Description

### 4.1 Identification

#### 4.1.1 Chemical name

Aluminosilicate ( $\text{Al}_x\text{Si}_y\text{O}_z$ ).

#### 4.1.2 Synonym or common names

Expanded clay, expanded slate.

### 4.2 Commercial forms

Expanded aluminosilicate according to this standard is available in different particle size ranges.

## 5 Physical properties

### 5.1 Appearance

Grey-brown to red-brown coloured granular material.

Spherical or angular shape, crystalline structure, smooth or rough texture.

The product shall be generally homogeneous and shall be visibly free of extraneous matter.

### 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 The particle size can decrease during transportation and handling.

The particle size distribution shall be described by either :

a) effective size,  $d_{10}$ , with a permitted tolerance of  $\pm 5\%$  ;

uniformity coefficient,  $U$ , which shall be less than 1,5 ;

minimum size,  $d_1$ , with a permitted tolerance of  $\pm 5\%$  ;

or :

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

The maximum permitted contents of oversize and undersize are 5% ( $m/m$ ) for application of the product as a filtration layer in multi media filters and 10% ( $m/m$ ) for use in single media filters. For use as a support layer, maximum contents of oversize and undersize of 15% ( $m/m$ ) are acceptable. See A.2.3 for examples of available particle sizes that are used.

NOTE 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 300 kg/m<sup>3</sup> to 900 kg/m<sup>3</sup>.

#### 5.3.2 Bulk density packed

The bulk density packed shall be in the range of 320 kg/m<sup>3</sup> to 950 kg/m<sup>3</sup>.

## 6 Chemical properties

The content of acid-soluble material shall be less than 7 percent by mass (% ( $m/m$ )).

NOTE 1 The exact composition does not influence filtration properties and is given in A.2.1.

NOTE 2 After filling, washing and commissioning of a filter system producing drinking water, expanded aluminosilicates should not increase the content of toxic substances. For the purpose of this standard, "toxic substances" are those defined in the EU Directive 80/778/EEC of July 15, 1980 (see [1]).

NOTE 3 Water extractable toxic substances, determined in accordance with the method for granular materials given in EN 12902, can be used to estimate the leaching of toxic substances.

## 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.

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## 8 Labelling, transportation and storage

### 8.1 Means of delivery

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

In order that the purity of the product is not affected, the means of delivery shall not have been used previously for any different product or it shall have been specially cleaned and prepared before use.

### 8.2 Risk and safety labelling in accordance with the EU Directives<sup>1)</sup>

Expanded aluminosilicates are not listed as dangerous substances.

### 8.3 Transportation regulations and labelling

Expanded aluminosilicates are not dangerous goods.

### 8.4 Marking

The marking shall include the following:

- "expanded clay" or "expanded slate", trade name and particle size range ;

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<sup>1)</sup> See [2].



- net mass or volume ;
- name and address of supplier and/or manufacturer ;
- the statement "this product conforms to EN 12905".

## 8.5 Storage

### 8.5.1 Long term chemical stability

Expanded aluminosilicates can be stored for an unlimited period of time.

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