SLOVENSKI STANDARD
SIST EN 14069:2018

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SIST EN 14069:2004

Sredstva za apnjenje - Opisi, specifikacije in označevanje

Liming materials - Denominations, specifications and labelling

Kalkdünger - Beschreibung, Spezifizierung und Kennzeichnung

Amendements minéraux basiques - Dénominations, spécifications et étiquetage

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Liming materials - Denominations, specifications and labelling

Amendements minéraux basiques - Dénominations, spécifications et étiquetage

Kalkdünger - Beschreibung, Spezifizierung und Kennzeichnung

This European Standard was approved by CEN on 2 July 2017.

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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.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (EN 14069:2017) has been prepared by Technical Committee CEN/TC 260 “Fertilizers and liming materials”, the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by May 2018, and conflicting national standards shall be withdrawn at the latest by May 2018.

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 14069:2003.

In comparison with the previous edition, the following changes have been made:

a) the minimum requirements laid down in Regulation (EC) No 463/2013 [2] amending Regulation (EC) No 2003/2003 [1] concerning liming materials have been taken into account;

b) references to analytical methods extended;

c) the requirements are specified for products of standard quality and for fine quality products (see Table 1 to Table 6);

d) requirements concerning oxide and hydroxide limes of natural origin added (see Table 2);

e) requirements concerning silicate limes added (see Table 4);

f) requirements concerning mixed limes added (see Table 5);

g) requirements concerning mixtures of liming materials with other EC fertilizer types added (see Table 6);

h) requirements for declaration and labelling extended according to Regulation (EC) No 463/2013 [2];

i) editorially revised.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

Introduction

Throughout the member countries of CEN, regular liming to regulate the soil pH level and to neutralize the effect of soil acidification is a well-established and essential agricultural operation on all soils in humid climates and under all systems of agricultural cultivation. Liming improves soil fertility and supplies essential plant nutrients.

Liming materials are also used in forest liming, lake liming and the liming of water catchment areas.

A wide range of natural geological deposits of liming materials is found in all member countries of CEN. Some industrial processes produce materials acceptable as liming products. This very wide range of material differs substantially in both chemical and physical properties. The use of these various materials will vary according to the type of material.

Still, this standard specifies the main properties of the liming materials used in Europe.

However, for the purpose of comparison of these products, it is necessary to describe and specify the minimum requirements of a liming material.

In the frame of the 1st revision of this European Standard the minimum requirements laid down in Regulation (EC) No 463/2013 [2] amending Regulation (EC) No 2003/2003 [1] concerning liming materials have been taken into account.

Liming materials in Europe show a large diversity due to factors as climate and type of crops, production, transport, storing and spreading of lime adapted to regional conditions. Standard quality covers these varying liming materials, whilst Fine quality credits rapidly dissolving materials needed for certain specialized agricultural productions or to allow the dissolution of the liming material in some soil types having a higher pH value in a rapid and controlled way.

1 Scope

This European Standard describes and specifies the requirements of products of natural origin and products from industrial processes of basic and fine quality to be used as liming materials in agriculture for raising the pH of soil (and water).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12048, *Solid fertilizers and liming materials - Determination of moisture content - Gravimetric method by drying at (105 +/- 2)°C (ISO 8190:1992, modified)*

EN 12944-1, *Fertilizers and liming materials and soil improvers - Vocabulary - Part 1: General terms*

EN 12944-3, *Fertilizers and liming materials - Vocabulary - Part 3: Terms relating to liming materials*

EN 12945, *Liming materials - Determination of neutralizing value - Titrimetric methods*

EN 12946, *Liming materials - Determination of calcium content and magnesium content - Complexometric method*

EN 12947, *Liming materials - Determination of magnesium content - Atomic absorption spectrometric method*

EN 12948, *Liming materials - Determination of size distribution by dry and wet sieving*

EN 13475, *Liming materials - Determination of calcium content - Oxalate method*

EN 13971, *Carbonate and silicate liming materials - Determination of reactivity - Potentiometric titration method with hydrochloric acid*

EN 14397-2, *Fertilizers and liming materials - Determination of carbon dioxide - Part 2: Method for liming materials*

EN 14984, *Liming materials - Determination of product effect on soil pH - Soil incubation method*

EN 15704, *Liming materials - Determination of the breakdown of granulated calcium and calcium/magnesium carbonates under the influence of water*

EN 16357, *Carbonate liming materials - Determination of reactivity - Automatic titration method with citric acid*

ISO 6598, *Fertilizers — Determination of phosphorus content — Quinoline phosphomolybdate gravimetric method*

ISO 7497, *Fertilizers — Extraction of phosphates soluble in mineral acids*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12944-1 and EN 12944-3 apply.

4 Denominations and specifications for liming materials

The denominations (type designations), specifications and elements to be declared are specified in Table 1 to Table 6 as follows:

— Table 1: Natural limes

— Table 2: Oxide and hydroxide limes of natural origin

— Table 3: Limes from industrial processes

— Table 4: Silicate limes

— Table 5: Mixed limes

— Table 6: Mixtures of liming materials with other EC fertilizer types

Granulated liming materials which are produced by aggregating smaller primary particles shall break down when stirred in water into particles with fineness distributions as specified in the type descriptions, and as measured using the method specified in EN 15704.

All the properties mentioned in the Table 1 to Table 6 refer to the product as supplied unless otherwise specified.

All the neutralizing requirements are expressed as CaO-equivalent and as HO^--equivalent in brackets.

For mixed limes other than specified in Table 5, users of these products shall check the compliance of these products with the national regulations for agricultural liming materials.

For products obtained by mixing, the type designation shall be completed by the list of the components with the maximum of three types.

In case of mixtures of raw materials containing dolomite for common grinding, the final mixed product shall be finer than 97 % at 1,5 mm.

Table 1 — Natural limes

<table>
<tr><th>Type designation</th><th>Data on method of production and essential ingredients</th><th>Minimum content of nutrients as supplied (percentage by mass)
Data on the expression of nutrients
Other requirements</th><th>Other data on the type designation</th><th>Nutrient content to be declared as supplied
Forms and solubility of the nutrients in dry matter
Other criteria to be declared
Methods of determination</th></tr>
<tr><td>Limestone – standard quality</td><td rowspan="2">Product or mixture of products of Table 1 containing as its essential ingredient calcium carbonate, obtained by grinding of natural deposits of limestone</td><td>Minimum Neutralizing Value: 42 as CaO ($25,5$ as HO^-)
Fineness determined by sieving:
– at least 97 % to pass through a 3,15 mm sieve and
– at least 70 % to pass through a 1 mm sieve and
– at least 50 % to pass through a 0,5 mm sieve.</td><td>Usual trade names or alternative names may be added.</td><td rowspan="2">Neutralizing Value (EN 12945)
Total calcium (EN 12946 or EN 13475)
Total magnesium (optional) (EN 12946 or EN 12947)
Wet product (if moisture content > 2 % (EN 12048))
Fineness determined by sieving (EN 12948)
Reactivity and method of determination (optional) (EN 13971, EN 16357, EN 14984)</td></tr>
<tr><td>Limestone – fine quality</td><td>Minimum Neutralizing Value: 50 as CaO (30,3 as HO-)
Fineness determined by sieving:
– at least 97 % to pass through a 2 mm sieve and
– at least 80 % to pass through a 1 mm sieve and
– at least 50 % to pass through a 0,315 mm sieve and
– at least 30 % to pass through a 0,1 mm sieve.</td><td>Usual trade names or alternative names may be added.</td></tr>
</table>

Type designation	Data on method of production and essential ingredients	Minimum content of nutrients as supplied (percentage by mass) Data on the expression of nutrients Other requirements	Other data on the type designation	Nutrient content to be declared as supplied Forms and solubility of the nutrients in dry matter Other criteria to be declared Methods of determination
Magnesian limestone – standard quality	Product or mixture of products of Table 1 containing as its essential ingredients calcium carbonate and magnesium carbonate, obtained by grinding of natural deposits of magnesian limestone	Minimum Neutralizing Value: 45 as CaO (27,3 as HO-) Total magnesium: ≥ 3 % MgO to < 12 % MgO Fineness determined by sieving: – at least 97 % to pass through a 3,15 mm sieve and – at least 70 % to pass through a 1 mm sieve and – at least 50 % to pass through a 0,5 mm sieve.	Usual trade names or alternative names may be added.	Neutralizing Value (EN 12945) Total calcium (EN 12946 or EN 13475) Total magnesium (EN 12946 or EN 12947) Wet product (if moisture content > 2 % (EN 12048)) Fineness determined by sieving (EN 12948) Reactivity and method of determination (optional) (EN 13971, EN 16357, EN 14984)
Magnesian limestone – fine quality		Minimum Neutralizing Value: 52 as CaO (31,5 as HO-) Total magnesium: ≥ 3 % MgO to < 12 % MgO Fineness determined by sieving: – at least 97 % to pass through a 2 mm sieve and – at least 80 % to pass through a 1 mm sieve and – at least 50 % to pass through a 0,315 mm sieve and – at least 30 % to pass through a 0,1 mm sieve.	Usual trade names or alternative names may be added.	

Type designation	Data on method of production and essential ingredients	Minimum content of nutrients as supplied (percentage by mass) Data on the expression of nutrients Other requirements	Other data on the type designation	Nutrient content to be declared as supplied Forms and solubility of the nutrients in dry matter Other criteria to be declared Methods of determination
Dolomitic limestone – standard quality	Product or mixture of products of Table 1 containing as its essential ingredients calcium carbonate and magnesium carbonate, obtained by grinding of natural deposits of dolomite	Minimum Neutralizing Value: 48 as CaO (29,1 as HO-) Total magnesium: ≥ 12 % MgO Fineness determined by sieving: – at least 97 % to pass through a 3,15 mm sieve and – at least 70 % to pass through a 1 mm sieve and – at least 50 % to pass through a 0,5 mm sieve.	Usual trade names or alternative names may be added.	Neutralizing Value (EN 12945) Total calcium (EN 12946 or EN 13475) Total magnesium (EN 12946 or EN 12947) Wet product (if moisture content > 2 % (EN 12048)) Fineness determined by sieving (EN 12948) Reactivity and method of determination (optional) (EN 13971, EN 16357, EN 14984)
Dolomitic limestone – fine quality		Minimum Neutralizing Value: 54 as CaO (32,8 as HO-) Total magnesium: ≥ 12 % MgO Fineness determined by sieving: – at least 97 % to pass through a 2 mm sieve and – at least 80 % to pass through a 1 mm sieve and – at least 50 % to pass through a 0,315 mm sieve and – at least 30 % to pass through a 0,1 mm sieve.	Usual trade names or alternative names may be added.	