



SLOVENSKI STANDARD
SIST EN 14069:2004

01-januar-2004

Sredstva za apnjenje – Opis in minimalne zahteve

Liming materials - Description and minimum requirements

Calcium-/Magnesium-Bodenverbesserungsmittel - Beschreibung und Mindestanforderungen

Amendements minéraux basiques - Description et exigences minimales

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ICS:

65.080 Gnojila Fertilizers

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EUROPEAN STANDARD

EN 14069

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English version

Liming materials - Description and minimum requirements

Amendements minéraux basiques - Description et exigences minimales

Calcium-/Magnesium-Bodenverbesserungsmittel - Beschreibung und Mindestanforderungen

This European Standard was approved by CEN on 1 October 2003.

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 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 Management Centre 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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This document (EN 14069:2003) 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of an identical text or by endorsement, at the latest by May 2004, and conflicting national standards shall be withdrawn at the latest by May 2004.

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, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

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EN 14069:2003 (E)**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.

Consequently, it is not possible to specify all the 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.

1 Scope

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

NOTE All other characteristics which are important when assessing their value will vary from country to country, and should always be declared and conform to the relevant national legislation.

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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 (including amendments).

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

3 Terms and definitions

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

3.1

carbonate conversion lime

material containing calcium carbonate as an essential component, obtained by the conversion of calcium ammonium nitrate in the fertilizer industry

NOTE It is foreseen to include this definition in EN 12944-3, as well, during its first revision.

4 Description and minimum requirements for liming materials

See Tables 1 and 2.

Table 1 — Products of natural origin

Denomination	Main chemical component(s)	Description	Minimum requirements (NV expressed on a dry matter basis)
Limestone	Calcium carbonate	Sedimentary or metamorphic rocks	NV 45
Chalk	Calcium carbonate	Sedimentary rocks (bryozoa inclusive)	NV 45
Dolomitic limestone	Calcium carbonate and magnesium carbonate	Sedimentary or metamorphic rocks	NV 48 Mg \geq 10 % (mass fraction)
Magnesian limestone	Calcium carbonate and magnesium carbonate	Sedimentary or metamorphic rocks	NV 45 Mg 2 % to < 10 % (mass fraction)
Burnt lime or Burnt magnesium lime	Calcium oxide and/or magnesium oxide	Material obtained by calcination of calcium carbonate or magnesium carbonate	NV 85 residual CO ₂ < 7 % (mass fraction) Mg > 10 % (mass fraction)
Slaked lime or Hydrated lime	Calcium hydroxide and/or Calcium magnesium hydroxide	Material produced through controlled reaction between quicklime and water (slaking)	NV 65
Mixed lime	Oxides, hydroxides and carbonates of calcium and / or calcium magnesium.	According to the components of the materials stated above	NV 45
NOTE 1 NV is the neutralizing value.			
NOTE 2 The Mg content, given as a mass fraction, can be expressed as MgO by multiplication with the factor 1,66.			

Table 2 — Products from industrial processes

Denomination	Main chemical component(s)	Description	Minimum requirements (NV expressed on a dry matter basis)
Carbonate conversion lime	Calcium carbonate	Material obtained by conversion of calcium ammonium nitrate in fertilizer industry	NV 45
Blast furnace lime	Calcium silicate and magnesium silicate	Material obtained from blast furnace slag	NV 42
Converter lime	Calcium and magnesium silicates and –oxides	Material obtained from basic oxygen furnace slag	NV 40
Converter lime from ladle slag	Calcium and magnesium silicates and –oxides	Material obtained by sieving of disintegrated ladle slag from the treatment of unalloyed/low alloyed ladle slags	NV 40
Sugar factory lime	Calcium carbonate	Precipitate of calcium carbonate resulting from the carbonation of slaked lime during the process of sugar juice purification	NV 37

NOTE NV is the neutralizing value.

5 Analytical methods

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The analysis of the liming materials shall be carried out according to EN 12945, EN 12946, EN 12947 and EN 14397-2.

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6 Tolerances

6.1 All the neutralizing values listed in Tables 1 and 2 are minimum values and are not subject to a tolerance.

6.2 Producers can specify a higher figure for neutralizing value and magnesium with the following tolerances:

- 2,5 units in the case of neutralizing value;
- 0,5 g / 100 g in the case of magnesium, expressed as Mg,

but shall always conform to the minimum values given in Tables 1 and 2.

7 Use of terms

7.1 The use of terms such as limestone, chalk, dolomite etc. shall always be in accordance with the geological origin of the product for products of natural origin and in accordance with the industrial process for other liming materials.

7.2 The term “magnesian” shall be used only if the Mg content of the product, given as a mass fraction, is between 2 % and 10 % Mg. For burnt magnesium lime the Mg content shall be higher than 10 % (mass fraction).

7.3 The term “dolomitic” shall be used only if the Mg content of the product, given as a mass fraction, is at least 10 %.