



DRAFT TANZANIA STANDARD

Agricultural liming materials — Specification

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TANZANIA BUREAU OF STANDARDS

Agricultural liming materials — Specification

0 Foreword

A liming material can raise the pH of a soil to optimum levels for crop production if used properly. Liming materials also provide calcium (Ca) and /or magnesium (Mg) to the soil for plant uptake. Materials that can cause an increase in pH include carbonates, oxides and hydroxides of calcium and magnesium.

This standard has been developed to ensure fair trade practices, safeguard the safety of the consumers and protect the environment.

In the preparation of this Tanzania Standard, considerable assistance has been derived from:

KS 2526:2016 Agricultural liming materials-Specification

In reporting the results of a test or analysis made in accordance with this Tanzania Standard, if the final value observed or calculated, is to be rounded off, it shall be done in accordance with TZS 4

1 Scope

This Tanzania Standard specifies the requirements, methods of sampling and tests for agricultural liming materials.

This standard applies to agricultural liming materials, including limestone, (calcitic and dolomitic). quicklime (burnt lime), hydrated lime, slag and shells

2 Normative references

The following referenced documents are indispensable for the application of this standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

TZS 4 *Rounding off numerical values.*

TZS 156, *Fertilizers and soil conditioners — Vocabulary*

TZS 1014, *Solid fertilizers and soil conditioners — Test sieving*

ISO 14820-1, *Fertilizers and liming materials — Sampling and sample preparation — Part 1: Sampling*

AOAC 2006.03, *Arsenic, cadmium, cobalt, chromium, lead, molybdenum, nickel, and selenium in fertilizers — Microwave digestion and inductively coupled plasma-optical emission spectrometry*

3 Terms and Definitions

For the purpose of this standard, the terms and definitions in TZS 156 and the following apply.

3.1

agricultural liming material

all materials containing calcium or magnesium in chemical form, physical condition and quantity capable of neutralizing soil acidity

3.2

limestone

a material consisting essentially of calcium carbonate or a combination of calcium carbonate with magnesium carbonate capable of neutralizing soil acidity

3.3

Burnt/Quicklime

a material, made from limestone which consists essentially of calcium oxide or combination of calcium oxide with magnesium oxide

3.4

calcium carbonate equivalent (C.C.E.)

the acid neutralizing capacity (of an agricultural liming material) of the material expressed as weight percent of calcium carbonate

3.5

fineness

the percentage by weight of the material which will pass sieves of specified sizes

3.6

hydrated lime

a material, made from lime, which consists essentially of calcium hydroxide or a combination of calcium hydroxide with magnesium oxide and/or magnesium hydroxide

4 Requirements

4.1 Chemical requirements

Agricultural liming materials requirements in terms of calcium carbonate equivalent (C.C.E) are shown in Table 1.

Table 1 — Agricultural liming materials requirements

No.	Material	Calcium carbonate equivalent (CCE), % min
i)	Quicklime	140
ii)	Hydrated lime	110
iii)	Limestone	80
iv)	Slag	80
v)	Shells	80

4.2 Physical Requirements for agricultural limestone

The sieve analysis shall be done in accordance with TZS 1014. Agricultural limestone shall be classified according to the minimum percentage passing the no. 8(2.36-mm) and no. 60(250µm/0.25mm) as shown in Table 2.

Table 2 — Sieve analysis classification for agricultural limestone

Class designation	Passing no. 8(2.36mm) sieve, min per cent	Passing no. 60(250µm sieve, min, per cent
S	100	100
T	99	75
O	95	55
N	90	40
E	80	25

5 Contaminants

Heavy metal contamination in Agricultural liming materials shall not exceed the limits given in table 3 when determined by the methods prescribed in AOAC 2006.03.

Table 3 — Heavy metal contaminants limits

SL No.	Parameter	Limits in ppm	Test methods
i)	Arsenic, As, max.	20.0	AOAC 2006.03
ii)	Cadmium, Cd, max.	15.0	
iii)	Mercury, Hg, max.	0.1	
iv)	Selenium, Se, max.	1.0	
v)	Lead, Pb, max.	30.0	

6 Sampling and Testing

6.1 Sampling

Sampling shall be carried out in accordance with ISO 14820-1.

6.2 Testing

Testing of the liming materials shall be done as prescribed in the methods of analysis indicated in respective standards.

7 Packaging, Marking and labelling

7.1 Packaging

Agricultural lime can be supplied in bulk or packaged as agreed between buyer and seller. If supplied in package, the package shall be in clean and non-defective material that protects the product from physical and chemical contamination and withstand multiple stages of handling (transportation and storage).

7.2 Marking and Labelling

7.2.1 The following shall be legibly and indelibly marked on the package in either Swahili or Swahili and English

- a) name and the address of the producer/manufacture/packer;
- b) type of the agricultural liming material;
- c) the brand or trade name of the material;
- d) the identification of the product as to the type of the agricultural liming material;
- e) the net weight of the agricultural liming material;
- f) the percentage of calcium carbonate equivalent (CCE)
- g) Country of origin

- h) Handling instructions
- i) Production date and expiry date
- j) Batch number
- k) Storage conditions

NB: Liming materials supplied in bulk shall bear the above information's

7.2.1 Marking

The containers/bags may also be marked with the TBS Standards Mark of Quality.

NOTE – The TBS Standards Mark of Quality may be used by the manufacturers only under license from TBS. Particulars of conditions under which the licenses are granted, may be obtained from TBS.

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