

DRAFT TANZANIA STANDARD

TBS/CDC 7(5418) P3 Methods of sampling of lime and limestone products (Revision of TZS 650:2003)

DRAFT FOR STAKEHOLDERS COMMENTS

TANZANIA BUREAU OF STANDARDS

Foreword

This Draft Tanzania Standard is being developed by the Industrial and Laboratory Chemicals Technical Committee under supervision of the Chemical Division Standards Committee and it is in accordance with the procedures of the Bureau.

This second edition after being finalized will cancel and thus replace the first edition of TZS 650:2003 Methods of sampling of lime and limestone products.

This Draft Tanzania Standard has been prepared with assistance drawn from:
KS 03 – 221: 1983, *Specification for lime for chemical industry*, published by the Kenya Bureau of Standards (KEBS); and

MS 850: 1983, *Methods of sampling of lime and limestone products*, published by the Department of Standards Malaysia.

In reporting the test results of a test or analysis made in accordance with this standard, if final value, calculated or observed is to be rounded off, it shall be done in accordance with TZS 4: *Rounding off numerical values*.

Methods of sampling of lime and limestone products

1 Scope

This Draft Tanzania Standard covers sampling methods of lime and limestone products.

2 General precautions

In drawing, preparing, storing and handling test samples, the following precautions and directions shall be observed:

2.1 Samples shall not be taken at a place exposed to weather or from damaged or broken packages.

2.2 Sampling instrument shall be clean and dry when used.

2.3 Precautions shall be taken to protect the samples, the material being sampled, the sampling instrument and the containers for samples from adventitious contamination.

2.4 To draw a representative sample, the contents of each container selected for sampling shall be mixed as thoroughly as possible by suitable means.

2.5 The samples shall be placed in clean-dry and air-tight glass or other suitable containers.

2.6 The sample containers shall be of such a size that they are almost completely filled by the sample.

2.7 Each sample container shall be sealed air-tight after filling and marked with full details of sampling, the date of sampling, month of manufacture, and other important particulars of the consignment.

3 Sampling from bulk in heaps or wagons

3.1 Samples shall be taken from each heap or wagon.

3.2 Unless otherwise agreed to between the purchaser and the vendor, draw several samples from each heap or wagon by means of a scoop of about 0.5 kg capacity from different parts, namely, the front, middle and back and at different depths so that the sample taken is representative of the bulk. Place the separate samples thus collected together in a covered cask to obtain an average sample. Empty out the contents of the cask on a level, clean and hard surface and spread them out flat and scoop the mass together into a cone. Flatten the cone and divide into four equal parts. Mix the two remaining parts together and form a cone out of it again. Repeat the operation of coming and quartering until finally about 1 kg of the average sample representative of the heap or wagon is left.

4 Sampling from packages

Scale of Sampling

4.1 Lot – All the containers in a single consignment of the material drawn from a single batch of manufacture shall constitute a lot. If a consignment is declared or known to consist of different batches of manufacture, the batches shall be marked separately and the containers belonging to the same batch shall be grouped together and each such group shall constitute a separate lot. In

the case of a consignment drawn from a continuous process, 1 000 containers or 100 t of the material shall constitute the lot.

NOTE – Samples shall be tested from each lot for ascertaining the conformity of the material to the requirements of the specification.

4.2 The number of containers to be chosen from lots of different sizes shall be as indicated in table 1.

Table 1 – Number of containers to be selected for sampling from different sizes of lots

Lot size (N)	Number of containers to be chosen (n)
2 to 15	2
16 to 40	3
41 to 65	4
66 to 110	7
Over 110	10

4.3 These containers shall be chosen at random from the lot and in order to ensure the randomness of selection, a random number table, as agreed to between the purchaser and the vendor, shall be used. In case such a table is not available, the procedure given in 4.4 shall be adopted.

4.4 Arrange all the containers in the lot in a systematic manner and starting from any container, count them as 1, 2... etc, up to r and so on. Every r^{th} container thus counted shall be withdrawn from the lot to give a sample for the test, where r is the integral part of N/n (see table 1).

5 Test samples

5.1 **Test samples for heaps of wagons** – A small but equal amount of material shall be collected from each average sample. The material so collected, from every 10 average samples or parts thereof, shall be mixed together to form composite samples. Each composite sample shall weigh about 600 g and shall be divided into 3 equal parts, one for the purchaser, another for the vendor and the third for the referee. The remaining portions of each average sample from individual test samples and, like the composite sample, they too shall be divided into 3 equal parts.

5.2 **Preparation of test samples from packages** – To prepare a set of test samples, draw with an appropriate sampling instrument, small portions of the material from different parts of each container selected under 4.2 and freshly opened. The total quantity of the material drawn from each container shall be sufficient to conduct the tests for all the characteristics given under requirements of individual specification and shall not exceed 1 kg.

5.2.1 Thoroughly mix all portions of the material drawn for the same container. Out of these portions, a small but equal quantity shall be taken from each selected container and shall be well mixed so as to form a composite sample weighing not less than 600 g. This composite sample shall be divided into 3 equal parts, one for the purchaser, another for the vendor and the third for the referee.

5.2.2 The remaining portions of the material from each selected container (after a small quantity needed for formation of the composite sample has been taken out) shall be divided into 3 equal parts, each part weighing not less than 50 g. These parts shall be immediately transferred to thoroughly dried bottles which are then sealed air-tight with stoppers, and labeled with all the particulars of sampling given under 2.7. These individual samples shall be separated into 3 identical sets of test samples in such a way that each set has a test sample representing each container selected under 3.2. One of these 3 sets shall be marked for the purchaser, another for the vendor and the third for the referee.

6 Referee sample

Referee sample shall consist of the composite sample and a set of test sample marked for this purpose and shall bear the seals of the purchaser and the vendor. These shall be kept at a place agreed to between the purchaser and the vendor and shall be used in case of a dispute between the two.

7 Number of tests

7.1 Tests for the determination of available lime or total calcium oxide content, or both, shall be conducted individually on each of the samples constituting a set of test sample (see 5.1 and 5.2.2).

7.2 Tests for the determination of other characteristics shall be conducted on the composite sample prepared as given under 5.1 and 5.2.1.

8 Criterion for conformity

8.1 In the case of heaps or wagons, if the individual test samples (see 5.1) satisfy the specification requirements for available lime or total calcium oxide content, or both, the heap or wagon from which the test sample was made shall be deemed as conforming to the requirements of that characteristic.

8.2 In the case of sampling from packages, for available lime or total calcium oxide content, or both, mean and range of test results shall be computed.

If the value of the expression $(\text{Mean} - 0.6 \text{ Range})$ is greater than or equal to the minimum value for the characteristic specified in the individual standard, then the lot shall be considered as conforming to the requirements of the particular characteristic.

8.3 As far as the remaining characteristics are concerned, the test results on the composite sample (see 7.2) shall meet the corresponding requirements as specified in the individual standard.

If the requirements for any of the characteristics are not met, the lot or group of wagons or heaps shall be declared to have not satisfied the requirements of the specification.