SRI LANKA STANDARD 559 : 1982

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METHOD FOR SAMPLING OF FERTILIZERS

BUREAU OF CEYLON STANDARDS

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SLS 559 : 1982

Gr. 5
(Attached AMD 226)

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Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the Committees to which the revisions are entrusted.

This Standard does not purport to include all the necessary provisions of a contract.

SRI LANKA STANDARD
METHOD FOR SAMPLING OF FERTILIZERS

FOREWORD

This Sri Lanka Standard was authorized for adoption and publication by the Council of the Bureau of Ceylon Standards on 1982-05-24. after the draft, finalized by the Drafting Committee on Fertilizers had been approved by the Agricultural and Food Products Divisional Committee.

In the preparation of this standard, valuable assistance derived from related publications of the Indian Standards Institution and the Fertilizers and Feeding Stuffs Regulations 1968 (Britain) is gratefully acknowledged.

1 SCOPE

This standard prescribes methods of drawing representative test samples of liquid and solid fertilizers in packages as well as in bulk.

2 REFERENCES

SLS 428 Random sampling methods.

3 DEFINITIONS

For the purpose of this standard, the following definitions shall apply:

3.1 **lot** : Entire quantity of material, assumed to be of same grade and type and drawn from a single batch of manufacture shall constitute a lot.

3.2 **composite sample** : A sample prepared by mixing an equal quantity of material drawn from containers or packages or portions of materials drawn from a bulk.

4 GENERAL REQUIREMENTS OF SAMPLING

In drawing samples, the following directions shall be observed:

4.1 Samples shall not be taken at a place exposed to weather.

4.2 In every case the sampling shall be done as quickly as is possible consistent with due care and the material shall not be exposed any longer than is absolutely necessary.

4.3 Sampling instruments shall be clean and dry.

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

4.5 In the case of articles in packages, only unopened packages shall be selected for the purpose of the sample.

4.6 Samples shall not be drawn from part of any quantity which part bears the appearance of having received damage in transit or after delivery.

4.7 The material being sampled, the sampling instruments and the containers for samples shall be protected from adventitious contamination.

4.8 The sample containers shall be of such size, that they are almost filled by the sample.

4.9 Each sample container shall be sealed air-tight after filling and marked with at least the following information:

a) Sample number or other distinguishing mark;

b) Name of the material and its nominal composition;

c) Manufacturer's batch reference number (if available);

d) Date of sampling;

e) Place of sampling;

f) Signature of the sampler; and

g) Signature of the person or his representative on whose premises the sample was taken.

4.10 Samples shall be stored in shade.

5 SCALE OF SAMPLING

5.1 Each lot shall be tested separately for ascertaining their conformity to the requirements of the relevant specification.

5.2 Scale of sampling shall depend on the nature of material submitted for inspection and shall be in accordance with Appendix A. Where the mass of the whole quantity does not exceed 2 kg, or the whole quantity is in one container, the sample may consist of such a portion of the quantity as is fairly representative of the whole, and the sample shall be of not less than 200 g in mass.

6 TEST SAMPLE AND REFERENCE SAMPLE

6.1 The composite sample shall be divided into three equal portions and each of these samples shall constitute the test sample.

6.2 Each test sample shall be immediately transferred to a suitable container and marked with details of sampling as given in 4.9.

6.3 One sample so obtained shall be marked for the purchaser, another marked for the manufacturer. The third sample shall constitute the referee sample to be used in case of dispute.

APPENDIX A

A.1 WHERE THE FERTILIZER IS IN A STATE OF FINE DIVISION

A.1.1 Sampling from packages or containers

A.1.1.1 The number of packages or containers to be selected from the lot shall depend on the size of the lot and shall be in accordance with Table 1.

TABLE 1 - Selection of packages or containers

Lot size (No. of containers or packages in the lot)	Sample size (No. of containers or packages to be selected)
02 to 08	02
09 to 27	03
28 to 64	04
65 to 100	05
101 to 300	06
301 to 500	07
501 to 800	08
801 to 1300	09
1301 and above	10

A.1.1.2 Containers or packages shall be selected at random. To ensure randomness of selection a random number table given in SLS 428 shall be used.

A.1.2 Preparation of composite sample

A.1.2.1 Draw with an appropriate sampling instrument, small portions of the material from different parts of each container in the sample (see Fig. 1). Sampling instruments suitable for this purpose are given in Figures 2 to 4 (see also Note). The portions so obtained from the containers shall be mixed thoroughly to form a composite sample.

NOTE - Many different types and variations of apparatus are available. The dimensions given in the figures are included therefore solely as a guide.

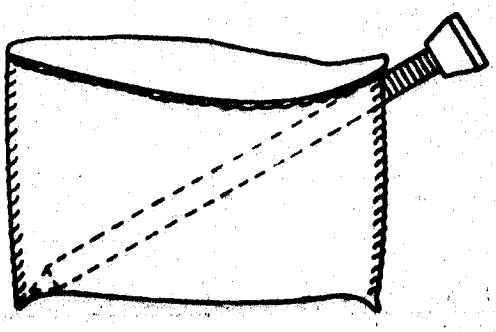

FIGURE 1 - Bag sampling technique

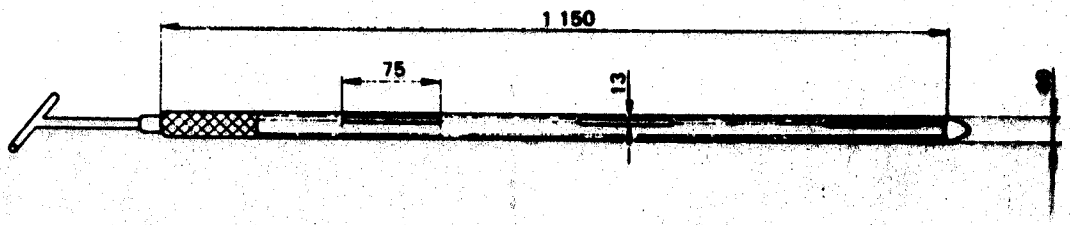

FIGURE 2 - Cylindrical sampler (divided bulk probe)

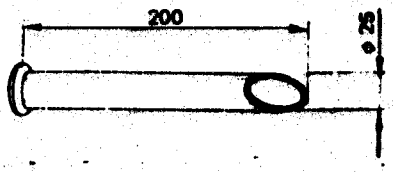

FIGURE 3 - Running iron (sack-type trier)

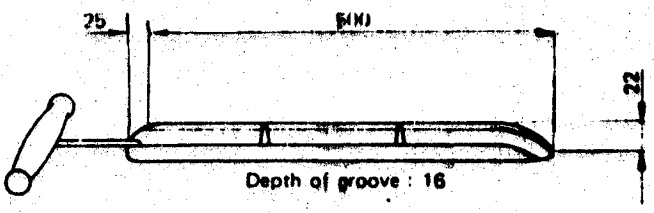

FIGURE 4 - Divided sampling spear (open trier)

All dimensions (Fig. 1 to 4) in millimetres.

A.1.2.2 If the containers do not permit the use of sampling instruments, empty the contents of the containers separately on a clean dry surface and work up with a shovel and one shovelful shall be taken from each. The shovelfuls so taken shall then be thoroughly mixed together to form a composite sample.

A.1.2.3 If the composite sample is much larger than 2 kg, its size shall be reduced by the method of quartering. For this purpose, spread the composite sample on a level, clean, hard surface. Flatten it out and divide it into four equal parts. Remove any diagonally opposite parts. Mix the two remaining parts together to form a cone. Flatten out the cone, and repeat the operation of quartering till a composite sample of about 2 kg in mass is obtained.

A.1.3 Sampling from the bulk

A.1.3.1 Where the fertilizer is in bulk the number of portions taken from a lot depends on the mass of the lot and shall be in accordance with Table 2.

TABLE 2 - Selection of portions

Mass of the lot (in tonnes)	No. of portions to be selected
Less than or equal to 1	04
Greater than 1 and less than or equal to 2	06
Greater than 2 and less than or equal to 5	10
Greater than 5 and less than or equal to 10	15
Greater than 10 and less than or equal to 25	25
Greater than 25 and less than or equal to 50	40
Greater than 50 and less than or equal to 100	60
More than 100 tonnes	80

A.1.3.2 These portions shall be taken by a shovel or an appropriate sampling instrument from different parts of the bulk.

A.1.4 Preparation of composite sample

A.1.4.1 The portions of the material selected according to A.1.3.1 shall be mixed thoroughly to form a composite sample.

A.1.4.2 If the composite sample is much larger than 2 kg its size shall be reduced by the method described in A.1.2.3.

A.2 WHERE THE FERTILIZER IS IN A COARSE OR LUMP CONDITION

A.2.1 Sampling from packages or containers

A.2.1.1 Number of packages or containers to be selected from a lot shall be in accordance with A.1.1.1.

A.2.2 Preparation of composite sample

A.2.2.1 The containers or packages selected as in A.2.1.1 shall be emptied separately on a clean dry surface and worked up with a shovel and one shovelful taken from each. The shovelfuls so taken shall be crushed immediately and the whole passed through a sieve with meshes 30-mm square. It shall be mixed thoroughly and rapidly.

A.2.2.2 If the composite sample is much larger than 2 kg, its size shall be reduced by the method described in A.1.2.3.

A.2.3 Sampling from bulk

Shovelfuls shall be taken according to the scale given in A.1.3.1.

A.2.4 Preparation of composite sample

Composite sample shall be prepared according to the methods given in A.1.4.

A.3 WHERE THE FERTILIZER CONSISTS OF BULKY MATERIAL, UNEVEN IN CHARACTER AND LIKELY TO GET MATTED TOGETHER

A.3.1 Sampling from packages

Number of packages or containers to be selected for sample shall be as in A.1.1.1.

A.3.2 Preparation of composite sample

A.3.2.1 The packages or containers selected for sample shall be emptied separately on a clean dry surface and the matted portions torn up. One shovelful shall be taken from each and shall be thoroughly mixed together.

A.3.2.2 If the sample is larger than 2 kg, its size shall be reduced by the method described in A.1.2.3.

NOTE - If the material separates into a fibrous part and a powdery part, the sample drawn shall consist of these two parts in approximately their relative proportions as they exist in the material.

A.3.3 Sampling from bulk

Number of portions to be selected from the lot shall be as in A.1.3.1.

A.3.4 Preparation of composite sample

Composite sample shall be prepared as given in A.1.4.

A.4 WHERE THE FERTILIZER IS IN A FLUID CONDITION

A.4.1 Sampling from bottles, drums, kegs or other containers

A.4.1.1 The number of bottles or containers to be selected from the lot shall be as in A.1.1.1.

A.4.1.2 *Preparation of composite sample*

A.4.1.2.1 The entire contents of the selected bottles or containers shall be emptied into a clean, dry glass or glazed earthenware vessel and well mixed by stirring or shaking. From this mixture, a sample of about one litre to two litres shall be drawn.

A.4.1.2.2 In the case of drums or kegs the selected containers shall be well shaken and the contents agitated or otherwise treated to ensure uniformity. An approximately equal proportion of the fluid shall then be taken immediately from each of the selected containers, emptied into clean dry glass or glazed earthenware vessel and well mixed by stirring or shaking. From this mixture a sample of one litre to two litres shall be taken, the mixture being stirred or shaken until immediately before the sample is drawn.

A.4.2 Sampling from bulk containers or tanks

If it appears that the liquid is not homogeneous the contents shall be well stirred or otherwise agitated to ensure thorough mixing. The contents shall be sampled by slowly lowering an open tube perpendicularly into the container. The tube must be long enough to reach the bottom of the container. The upper end of the tube shall then be closed and the contents transferred to glass bottles with either well fitting ground glass stoppers or air-tight plastic screw stoppers. The process shall repeat if necessary, until a quantity of about one litre to two litres has been drawn.

AMD 226

AMENDMENT NO. 01 TO SLS 559 : 1982
METHOD FOR SAMPLING OF FERTILIZER

EXPLANATORY NOTE

This amendment is introduced to include number of containers or packages to be selected from the lot of size up to 35000 containers or packages as requested by the Quality Assurance Division of the Sri Lanka Standards Institution.

AMENDMENT NO. 01 APPROVED ON 1996-12-12 TO SLS 559 : 1982
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Clause A.1.1.1 TABLE 1

Substitute the existing table with the following:

TABLE 1 - Selection of packages or containers

Lot size (No. of containers or packages in the lot)	**Sample size (No. of containers or packages to be selected)**
Up to 150	5
151 to 500	7
501 to 1200	10
1201 to 10000	15
10001 to 35000	20
35001 and above	30

BUREAU OF CEYLON STANDARDS

The Bureau of Ceylon Standards (BCS) is the national standards organization of Sri Lanka and was established by the Hon. Minister of Industries & Fisheries, as provided for by the Bureau of Ceylon Standards Act. No. 38 of 1964.

The principal objects of the Bureau as set out in the Act are to promote standards in industry and commerce, prepare national Standards Specifications and Codes of Practice and operate a Standardization Marks Scheme and provide testing facilities, as the need arises.

The Bureau is financed by Government grants and the sale of its publications. Financial and administrative control is vested in a Council appointed in accordance with the provisions of the Act.

The detailed preparation of Standard Specifications is done by Drafting Committees composed of experts in each particular field assisted by permanent officers of the Bureau. These Committees are appointed by the Divisional Committees, which are appointed by the Council. All members of the Drafting and Divisional Committees render their services in an honorary capacity. In preparing the Standard Specifications, the Bureau endeavours to ensure adequate representation of all view points.

In the international field the Bureau represents Sri Lanka in the International Organization for Standardization (ISO) and will participate in such fields of Standardization as are of special interest to Sri Lanka.

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