CHAPTER 2

DEFINITIONS OF TERMS USED

N.B Since these definitions form the basis of all discussions in this document, it is suggested that the reader make sure that he thoroughly understands them before he uses the rest of the manual.

1. **SAMPLE**

A sample is a portion or a combination of portions of a lot of a material whose degree of representation is not necessarily important and is therefore not specified. (See Definition 3.)

2. **REPRESENTATIVE SAMPLE**

A representative sample is a portion or a combination of portions of a lot of a material whose **degree of representation** is important and is therefore **specified.**

(It is important to understand that the representation of a sample varies between the extremes of being poorly representative and absolutely representative. This simply means that the larger the sample in proportion to the lot, the more representative it becomes, until the whole lot is tested and one may talk in terms of **absolute representation.**)

3. **SAMPLE LOT**

A lot of material means **a discrete specific quantity of the material** which can for all practical purposes be regarded as **a separate entity** and which does not inherently vary disproportionately in respect of the determining characteristics. (See Definition 4.)

(The size of a lot is usually determined by:
(a) The consignment or delivered quantity.
(b) The way in which it is stored when the sample is taken.
(c) The variation of the characteristics of the material.

A sample lot is therefore the specific heap, load, tank, drum or quantity of material which can be represented by a specific sample.)

4. DETERMINING CHARACTERISTICS OF A MATERIAL

These are characteristics of a material which will **determine its performance in the specific use** for which it is intended.
(The colour of gravel has no direct influence on its performance as a road foundation material. The colour of the gravel is therefore a fortuitous or **non-determining** characteristic.)

5. MINIMUM ACCEPTABLE SIZE OF A SAMPLE

This is the smallest quantity of material which can serve as a sample provided that the determining characteristics of the material can be measured with an acceptable degree of accuracy by means of such a sample.

6. MAXIMUM ACCEPTABLE SIZE OF A SAMPLE

The maximum acceptable size of a sample is the largest sample from which the desired degree of representation or accuracy can be obtained relative to the purpose for which the sample was taken.

7. **PRIMARY OR FIELD SAMPLE**

This is the sample originally taken from the lot at the storage site, and its size is determined by the degree of representation or accuracy can be obtained relative to the purpose for which the sample was taken.

8. SECONDARY OR LABORATORY SAMPLE

This is the sample taken from the original sample which is used to extract the test samples. A secondary sample is divided up to provide the secondary sample is usually obtained by division of the original sample on site and its size is determined by the specific tests for which it is needed.

9. **TERTIARY OR TEST SAMPLE**

This is the material used for a specific test. It is extracted from the secondary sample and its quantity depends on the quantity prescribed for the particular test which is to be done.

10. **INCREASE OF THE NUMBER OF TESTS**

When the sample size as prescribed by the test method is too small to ensure a specified degree of accuracy, the number of tests must be increased to give greater confidence about the results obtained.

11. **REPRODUCIBILITY OF A TEST**

This is the degree of variation between the results obtained by the same operator repeating a test on the same material. This factor measures therefore measures the human influence or human error in the execution of a test.

12. **REPEATABILITY OF A TEST**

This is the degree of variation between the results obtained by the same operator repeating a test on the same material. This factor therefore measures the repeatability of the same test under constant conditions, or in other words the precision of the test.

13. **SINGLE SAMPLE**

A single sample is a sample taken from a heap or a container in a random or non-random manner.

14. **COMPOUND SAMPLE**

A compound sample is composed of a number of single samples taken in a random or non-random manner. (Cf. Definition 13.)

15. **MEAN SAMPLE**

A mean sample consists of a series of single samples taken according to a predetermined fixed pattern, the size of every single sample being in proportion to the quantity of material it represents out of the whole. (See Definition 13.)

16. **APPROXIMATE MEAN SAMPLE**

A sample consisting of a series of single samples taken according to a predetermined fixed pattern, the size of every single sample being in proportion to the quantity of material it represents out of the whole. (See definitions 13 and 15.)

17. **SAMPLE WITH CONSTANT CHARACTERISTICS**

A sample whose determining characteristics are normally remain constant, unless they are artificially changed.

18. **SAMPLE WITH CHANGING CHARACTERISTICS**

A sample whose determining characteristics are normally in the process of changing, unless they are artificially kept constant.

19. **SAMPLE WITH CHANGED CHARACTERISTICS**

A sample whose determining characteristics have been changed externally.