



SAMPLING SOIL AND AGGREGATE BASE

1. SCOPE

1.1 This method covers procedures for obtaining representative samples of soil and aggregate base materials.

1.2 These procedures are intended for Borrow, Quarry Waste, Crusher Run, and CR-1. Similar materials may also be tested using this method.

2. REFERENCED DOCUMENTS

2.1 AASHTO Standards

- T191, Density of Soil In-Place by the Sand-Cone Method
- T310, In-Place Density and Moisture Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

2.2 Standard Forms

- LB-61

3. APPARATUS

3.1 *Sampling tools* – Various tools such as shovels, scoops, and hand augers are suitable for sampling soils and aggregate bases.

3.2 *Accessory equipment* – Supplies such as sample bags and tags are necessary.

4. SAMPLE PREPARATION

4.1 Recommended sample sizes for routine testing.

Material	Minimum Sample Size
Borrow	3 lb. (1.5 kg)
Quarry Waste	25 lb. (12 kg)
Crusher Run	25 lb. (12 kg)
CR-1	40 lb (18 kg)

4.2 For additional testing, sample sizes should be adjusted to meet required sizes for each additional test.

4.3 It is recommended that samples larger than the minimum amounts be obtained.

4.4 In cases where it is difficult or impossible to split or quarter large samples in the field, the entire sample should be taken and split in the laboratory.

5. PROCEDURE

5.1 Borrow Pit Sampling.

5.1.1 Channel the face of the pit vertically, from bottom to top to obtain the sample.

5.1.2 Thoroughly mix and split or quarter the sample to the proper size.

5.1.3 Overburden and disturbed material shall not be included in the sample.

5.2 Stockpile Sampling.

5.2.1 Power equipment capable of exposing the material at various levels and locations should be used if available.

5.2.2 Take separate samples from different areas of the stockpile to represent the material.

5.2.3 If the stockpile contains little or no coarse material

5.2.3.1 To sample from a stockpile by hand

a) Remove the outer layer (*It may have become dry, causing segregation*)

b) Take a representative sample of damp soil.

5.2.3.2 To sample from a stockpile using a hand auger.

a) Auger at various locations to the bottom of the stockpile with a hand auger.

b) Mix and sample the material removed from the auger hole, or sample by strata (*if strata are distinguishable*).

5.3 Sampling at Grade.

5.3.1 Samples taken in conjunction with density tests, either the Sand Cone Method (AASHTO T191M) or the Nuclear Methods (AASHTO T310), shall be obtained as close as possible to the exact spot where the density test was taken.

5.3.2 Material being sampled shall be obtained by either taking the entire sample at one location (coarse particles) or by taking a composite sample (few coarse particles).

5.3.2.1 Sampling from one location

- a) Dig a hole with vertical sides to the bottom of the material.
- b) All of the material removed from the hole is the sample.

5.3.2.2 Composite sampling

- a) Dig a trench or a series of individual holes along the full width of placement
- b) All of the material removed from the trench or the holes is the sample.

6. REPORT

6.1 The following data should be reported on the tag (LB-61) which accompanies the sample:

6.1.1 Contract number and Federal Aid Project number when applicable

6.1.2 Contractor

6.1.3 Road

6.1.4 Location

6.1.5 Depth and elevation when known

6.1.6 Source

6.1.7 Type and use of material

6.1.8 Method of placement

6.1.9 Type of sample (Quality Assurance, Independent Assurance, etc.)

6.1.10 Date sampled

6.1.11 Name of person sampling

6.1.12 Any pertinent remarks