

## Method of Sampling Gravel, Stone, Sand, Filler, and Clay

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### 1. Scope:

These methods are for obtaining samples from stockpiles, conveyor belts, windrows and spreader. Procedures for reducing samples to testing size are described in SD 213.

Other methods giving representative samples may be used, if approved by the Chief Materials and Surfacing Engineer.

### 2. Apparatus:

2.1 Not specified.

### 3. Procedure:

Sampling is as important as testing. Every precaution will be used to obtain samples that are representative of the material.

#### 3.1 Stockpile.

NOTE: Unless noted below, stockpile sampling is to be used for preliminary and quality samples.

##### A. Cone shaped stockpile.

Take care to avoid sampling segregated areas of the pile. Take approximately equal portions from the base, midpoint, and top of the pile. Before obtaining the sample at each sampling point, remove the aggregate to an approximate depth of 1 foot, and then obtain sample from the bottom of the hole. A board may be shoved into the pile just above the point of sampling to prevent segregation.

##### B. Flat topped stockpile.

Dig three or more shallow trenches on top of the stockpile approximately 10 feet long and 1 foot wide. The bottom of the trenches will be nearly level. Take equal portions from 3 equally spaced points along the bottom of each trench by pushing a shovel downward into the material and taking a shovelful from each point.

##### C. Stockpile (Loader method).

Sample the material from at least 3 different areas around the perimeter of the stockpile. Using a front-end loader, dig into pile and set aside a small pile of approximately 10 to 15 tons. Material will be

removed from stockpile in same manner in which it will be removed for incorporation into project. The operator will roll the material from the loader bucket to reduce the amount of free fall. The additional buckets will be obtained and dumped in the same manner and placed uniformly over the preceding pile.

NOTE: When other methods of sampling can't be used, acceptance, independent assurance and other samples may be obtained during production at stockpile by sampling, the material from the area of the stockpile that is being incorporated into the project.

The small stockpile will then be struck off to approximately half of its original height by back dragging with the loader bucket. Take the required amount of material for the sample from 3 locations on the top exposed surface with a shovel taking care not to let material fall off the shovel.

### 3.2 Conveyor belt.

- A. Stop the conveyor belt while obtaining the sample. Insert 2 templates conforming to the width and shape of the belt into the aggregate stream on the belt. Scoop all material between the templates into a suitable container using a brush to collect the fines on the belt.

If templates are not available, care must be taken to prevent material from the upper side of the belt from sliding or rolling onto the section being sampled. Sample the full width of the belt.

- B. A special device capable of obtaining an entire cross section of the material as it is being discharged from the belt may be used. This device must consist of a pan of sufficient size to intercept the entire cross section of the discharge stream and hold the required quantity of material without overflowing. A set of rails or another suitable device must be included so that a representative sample of the entire stream can be obtained. Obtain at least three approximately equal increments and combine to form the field sample.

### 3.3 Windrows.

Sample the material in windrows by shoveling through small windrows or removing material to the midpoint of the cross section of large windrows. Waste the material removed in both procedures. Shave material from one face of the cross sectional area for the sample.

### 3.4 Spreader.

NOTE: Samples will be taken from a belt whenever physically possible.

Sample the material from 3 to 5 locations immediately behind the spreader (before roller compaction). Take the required amount of material for the sample from the surface with a flat blade shovel taking care not to obtain material from the subgrade or lower lift.

**4. Report:**

None required.

**5. References:**

SD 213