



# TEX-101-E, PART I

Preparing Soil and Flexible Base Material for Testing



## Why

Preparing soil and flexible base samples for various testing.



## When

Specifications require soil constants and particle size analysis, compaction and triaxial, and sieve analysis of road-mixed material. If only soil constants are needed, prepare according to either Method A or Method B. If size analysis or percent soil binder is also needed, prepare according to Method A. Prepare referee sample in accordance with Method A.



## How

### Equipment

- Set of standard sieves
- Scale; minimum 80 lbs.
- Oven, maintain 140° F.
- Wedgewood mortar and pestle
- Filter paper
- Sample splitter
- Mechanical stirring device
- Dispenser cup
- Plaster of Paris molds (optional)



### Sample Identification

- Give each sample an identification number.

### Preparing Samples

- Dry Preparation Method A – used for soil constants, particle size, percent soil binder, and referee testing.
  - Select a representative sample large enough to yield 300 grams of soil binder in accordance with Tex-110-E or Tex-400-A.
  - Dry material at 140° F
  - Remove particles larger than No.40 by hand, samples containing a considerable amount of aggregate can be separated by sieving over a No.40 sieve.
  - Cover material with water for a minimum of 12 hrs. or in accordance with Tex-102-E
  - Wash-soaked material over No. 40 sieve in increments into a clean catch pan.
  - Continue the steps until the entire sample is washed.
  - Material retained on the No. 40 sieve.
    - Dry at 140° F and rescreen over the No. 40 sieve.
    - Weigh the material retained on the No.40 sieve for use in Tex-110 Part 1.


**QUICK FACTS: SB 101 DRAFT**
**Preparing Samples (cont.)**

- Material passing the No.40 sieve.
  - Place the material aside undisturbed and allow it to settle out.
  - Decant water off and pour into plaster of Paris mold lined with filter paper.
  - Dry at 140° F or siphon off water.
  - Remove all the material from the filter paper.
  - Use a mortar and pestle to break down the material.
  - Rescreen the material over a No. 40 sieve and recombine with material from the material from the initial sieve.
  - Weigh to the nearest 5 g.
- Wet Preparation Method B - used for soil constants only.
  - Select a representative sample large enough to yield 300 g. of soil binder in accordance with Tex-110-E or Tex-400-A.
  - Soak sample with moderate to high PI for minimum of 12 hrs., or in accordance with Tex-102-E. Soak flexible base or low PI materials for minimum of two hrs.
  - Sieve wet material into clean pan over a No.10 sieve until wash water runs clear. (Discard material retained on sieve)
  - Place material into a dispersion cup and mix the material for 3 - 5 minutes.
  - Pour over No. 40 sieve into a plaster of Paris mold lined with filter paper.
  - Once the material can be divided into pie-like wedges remove from filter paper
  - If soil constants are not going to be performed immediately place into sealed bag.


**Action**

Calculate the soil binder percent using:

$$\text{Percent Soil Binder} = 100(W_1/W_T)$$

Where:

$W_1$  = dry mass of soil binder

$W_T$  = dry mass of total sample.