QUICK FACTS: SB 101 **DRAFT**

TEX-116-E

Ball Mill Method for Determining the Disintegration of Flexible Base Material

Why

To measure a material's ability to withstand degradation in the road base and detect soft aggregate vulnerable to weathering.

When

- Spec. 247
- Spec. 292

How

Equipment

- Wet Ball mill machine
- Metal steel spheres
- Scale
- Standard U.S. Sieves
- Container, 0.5 gal.

Procedure

Part I: Determining Disintegration

- Select a 12,000 g. representative sample.
- Dry at 140°F.
- Prepare in accordance with Tex-101-E part 2.
- Replace 1-3/4 in. material with 1-1/4 in. material.
- Recombine a 3500 ± 50 g. air-dried sample, weigh to the nearest whole gram.
- Cover with 2L of water for one hour.
- Decant off water back into the 2L container and bring the water level back up to 2L.
- Place six steel spheres in the mill.
- Use the 2L of water to wash the sample into the mill.
- Secure the lid and rotate the cylinder into the horizontal position, run for 600 revolutions at 58-62 rpms.
- After removing the lid and emptying the contents into a pan:
  - Wash over a No.40 sieve and remove the steel spheres,
  - Dry at 140°F,
  - Sieve back over the No.40 sieve,
  - Weigh to the nearest whole gram.

Part II: Determining Disintegration

- Recombine a 3000 g. sample, weigh to the nearest whole number.
- Wash over a No.40 sieve.
- Dry at 140°F.
- Sieve back over the No.40 sieve, weigh to the nearest whole gram.

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Action

- Calculations
  - Percentage of the soil binder from the Wet Ball Mill test:
    - WBM = 100 X (A – B) ÷ A
  - Original percentage of soil binder:
    - Original % of -No. 40 = 100 X (C – D) ÷ C
- Report Wet Ball Mill value to the nearest whole number.