QUICK FACTS: SB 101 **DRAFT**

TEX-105-E

Determining Plastic Limit of Soils

Why

To determine the moisture content at which soil cannot be remolded without cracking.

When

For Type A embankment, untreated base, treated new base, when required on the plans, or plasticity index is required.

- Specification 132
- Specification 247

How

Equipment

- Porcelain mixing dish
- Plastic Limit Rolling Device (PLRD)
- Scale
- Oven maintaining 230 ± 9°F.
- Plaster of Paris disks
- Rolling surface, if not using the PLRD

Procedure

- Use 20 g prepared in accordance with Tex-104-E
- Reduce the water content by putting in between two plaster of Paris disks, fan, or hand rolling on surface that will not contaminate the sample.
- Select four or five 1.5 - 2 g portions.
- Place a few portions in the PLRD evenly spaced apart and roll at a rate of 80-90 strokes per minute,
- Take no more than two minutes to deform the material to 1/8 ± 0.02 in
- Recombined back together, knead and reform into starting portion size.
- Repeat until the portions can no longer be rolled into 1/8 in threads.
- Put portions into a tared container and immediately cover.
- Collect a minimum of 10 g of rolled material.
- Weigh and record the material and container to the nearest 0.01 g. Record as A
- Place into an oven at 230 ± 9°F and dry to constant mass.
- Weigh and record dry weight of sample and container. Record as B

Action

- Calculations
  - Weight of water: W = A – B
  - Plastic Limit: PL (%) = 100 X [W ÷ (B –C)]

A = Weight of wet soil + tare, g
B = Weight of dry soil + tare, g
C = Weight of tare, g

- Report plastic limit to the nearest whole percent.