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**ENGINEERING SERVICE CENTER**  
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## **LABORATORY PROCEDURE FOR TREATING ASPHALT BINDER WITH LIQUID ANTI-STRIP FOR ASPHALT CONCRETE MIX DESIGN**

### **SCOPE**

This protocol provides a laboratory procedure for treating asphalt binder with liquid anti-strip for use in asphalt concrete mix design.

### **APPARATUS**

1. *Balance* - Accurate to 0.1 g.
2. *Metal Containers* – Suitable for blending and storing materials.
3. *Oven* – Conforming to California Test 304.
4. *Fume Hood*
5. *Miscellaneous Apparatus and Tools* – Stirring rod, heat resistant gloves and safety glasses or goggles.

### **MATERIALS**

1. Liquid Anti-Strip
  - A. Liquid anti strip shall conform to requirements of the project special provisions for “Liquid Anti-Strip Treatment of Asphalt Concrete.”
  - B. Liquid anti-strip shall not change the aged residue viscosity of the proposed asphalt binder by more than 60 Pa•s as measured by AASHTO T 202.
  - C. A “Certificate of Compliance” shall accompany all liquid anti-strip submittals.
2. Asphalt Binder
  - A. Asphalt binder with liquid anti-strip added at the proposed rate shall conform to all tests specified for the proposed asphalt binder.

## PROCEDURE

1. Heat the asphalt binder to be used in the mix design to the temperature specified in California Test 304. If a temperature is not specified, heat the asphalt binder to 150°C.

NOTE: Asphalt binder should not be overheated or allowed to remain at a high temperature for long periods of time.

2. Weigh out a sufficient mass of asphalt binder into a tarred metal container and determine the mass to the nearest 0.1g.
3. Weigh out the required amount of liquid anti-strip to the nearest 0.1g to provide the desired proportion by mass of asphalt binder.

NOTE: The asphalt binder shall contain liquid anti-strip at a rate of 0.5 percent to 1.0 percent by mass of asphalt binder. The exact proportion of liquid anti-strip shall be determined by the Contractor as part of the mix design process.

4. Under an operating fume hood, slowly stir the room-temperature liquid anti-strip into the hot asphalt binder.

NOTE: It is generally not necessary to heat the liquid anti-strip prior to mixing it with the asphalt binder. However, if the liquid anti-strip is too viscous at room temperature, it may be heated to 38°C and stirred prior to adding it to the asphalt binder.

5. Blend the liquid anti-strip and asphalt binder together for 2 minutes.

NOTE: The liquid anti-strip treated asphalt binder may be stored for a maximum of 96 hours in a sealed container, *but never place or store any sealed container in an oven.*

6. Proceed with the mix design in accordance with California Test 304.

## PRECAUTIONS

Extra care should be taken with the use of liquid anti-strip. It may have a strong or unpleasant aroma. Adequate ventilation and the proper safety equipment should be utilized. Avoid contact with the skin and eyes and avoid breathing contaminated air. *Do not place or store any sealed container in an oven.*