Bureau of Materials
Illinois Laboratory Test Procedure
Effective Date: January 1, 2007
Revised January 14, 2021

Separation of Polymer from Asphalt Binder

This test procedure applies to Article 1032.05(b) of the Standard Specifications for Road and Bridge Construction (April 1, 2016).

1.0 GENERAL

1.1 This procedure covers the testing required to evaluate the separation of polymer from asphalt binder.

2.0 REFERENCED DOCUMENT

2.1 AASHTO Standard

T 53 Softening Point of Bitumen (Ring-and-Ball Apparatus)

3.0 PROCEDURE

3.1 Carefully heat the sample avoiding localized overheating, until sufficiently fluid to pour.

3.2 Strain the melted sample through a No. 50 (300 µm) sieve and stir thoroughly.

3.3 Pour 50.0 grams of sample into a thin-wall aluminum tube having approximate dimensions of 1 in. (25 mm) diameter by 5 1/2 in. (140 mm) length. Fold the excess tube over two times and crimp to seal.

3.4 Place the sealed tube vertically in a 325 ± 10 °F (163 ± 6 °C) oven. Allow the tube to stand, undisturbed, in the oven for a period of 48 ± 1 hours. At the end of the heating period, immediately place the tube in a freezer at 20 ± 10 °F (-7 ± 6 °C), keeping the tube in a vertical position at all times. Leave the tube in the freezer for a minimum of four hours to completely solidify the sample.

3.5 Upon removing the tube from the freezer, place on a hard-flat surface and cut the tube into three equal length portions with a sharp spatula and hammer. Place the top and bottom portions into separate marked beakers and heat in a 325 ± 10 °F (163 ± 6 °C) oven until sufficiently fluid.

3.6 Remove the pieces of aluminum tube, stir thoroughly, and pour the top and bottom samples into marked softening point rings. Determine the softening point of the top and bottom portions of the sample simultaneously according to AASHTO T 53.