



Standard Test Procedures Manual

Section: EMULSIFIED ASPHALT

Subject: PENETRATION OF RESIDUE

1. SCOPE

1.1 Description of Test

This test method covers the determination of penetration of emulsion residues. Residue from the distillation of emulsion is allowed to cool under controlled conditions. The penetration is measured with a penetrometer, in which a standard needle is applied to the sample under specific conditions.

2. APPARATUS AND MATERIALS

2.1 Equipment Required

See ASTM D5, except that the sample container shall be approximately 53 mm in diameter by 70 mm deep. For penetrations above 300, a special penetration needle with an exposed length of approximately 50 mm is required.

3. PROCEDURE

3.1 Test Procedure

See ASTM D5, except for the following. As soon as possible after the distillation test, pour residual asphalt into the penetration container until it is approximately half full. Pour an Additional 25 ml of residue into a preheated container with a pouring spout and set this on a hot plate at 260°C for viscosity and float tests. Pour the remaining residue into the penetration container to a depth of approximately 60 mm. Do not pour residual asphalt through a sieve. The container shall be cooled for 1.5 hours in air and 1.5 hours in water before testing.

4. ADDED INFORMATION

4.1 References

See ASTM D5, Volume 04.03.

ASTM D244, Volume 04.03.

N.S.C. CAN 2-16.5-M84.

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4.2 General

For penetrations exceeding 500 at 25°C, 100 g, 5s, the penetration shall be estimated using the formula:

$$\text{Pen @ 25°C, 100 g, 5s} = (1.75) \times (\text{Pen @ 25°C, 50 g, 5s}) + 15.0$$

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STP 203-11

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APPROVAL SHEET

New Revision X Date of Previous Document 86-04-08

Effective Date: -

Description of Revision (Reason for Revision):

- Format of test procedure updated. Changed penetration formula for estimating penetration above 500 dmm.

Review/Implementation Process:

- Reviewed by the Materials Section of the Technical Standards and Policies Branch.

Other Manuals/Policies Affected:

Nil

Follow Up/Training Required:

Nil

Comments/Concerns/Implications (Budget/Environment/Stakeholders):

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93-10-14

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93-10-25

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