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

Linseed Oil Based Emulsion Curing Compound

This test procedure applies to Article 1022.01(d) of the Standard Specifications for Road and Bridge Construction (April 1, 2016).

1.0 GENERAL

1.1 This procedure covers the test required to determine the percent oil and percent water phase composition of the linseed oil based emulsion compound for curing concrete.

2.0 EQUIPMENT

2.1 Analytical balance capable of weighing 0.1mg

2.2 Drying oven capable of 110 ± 5 °C (230 ± 41 °F)

2.3 Muffle furnace capable of 760 ± 10 °C (1400 ± 50 °F)

2.4 Porcelain crucible

2.5 Desiccator

2.6 Syringe with cap (no needle)

3.0 PROCEDURE

3.1 Samples shall be run in duplicate.

3.2 Weigh the porcelain crucible, record the weight (*A*).

3.3 Transfer 1-2 grams of the sample via syringe into the crucible.

3.4 Determine the weight of the sample and crucible (*B*).

3.5 Place crucible and sample in drying oven at 110 ± 5 °C (230 ± 41 °F). Dry until sample reaches constant weight.

3.6 After drying, weigh and record the combined weight (*C*) of the crucible and sample residue.

3.7 Place the crucible and sample residue into a cold muffle furnace.

3.8 Set muffle temperature to 760 ± 10 °C (1400 ± 50 °F).

3.9 Once muffle reaches 760 ± 10 °C (1400 ± 50 °F), cool to 300 ± 10 °C (572 ± 50 °F).

3.10 Once the sample reaches 300 ± 10 °C (572 ± 50 °F), remove it from the muffle, allow to cool in a desiccator, and weigh (*D*).

4.0 CALCULATIONS

4.1 Calculate the % Water Phase and % Oil Phase:

4.1.1 Water Phase: $\left(\frac{C-A}{B}\right)\times 100$

4.1.2 Oil Phase: $\left(\frac{C-D}{B}\right)\times 100$

4.1.3 % Water Phase: $\left(\frac{WaterPhase}{WaterPhase+OilPhase}\right)\times 100$

4.1.4 % Oil Phase: $\left(\frac{OilPhase}{WaterPhase+OilPhase}\right)\times 100$