



DETERMINING COMPATIBILITY OF RAPID-SETTING ASPHALT EMULSIONS & AGGREGATES

SCOPE

This test method is intended to provide the procedure for determining the compatibility of rapid setting asphalt emulsion with aggregate when the combination is to be used for bituminous seal coat. Representative samples of the emulsion and aggregate proposed for the work are to be used for the tests.

APPARATUS

- Pan of sufficient size to dry approximately 2000 grams of aggregate
- Paper cup, glass beaker or plastic container for hot liquid, 8-oz. (240-ml) capacity
- Standard 4-in. (100-mm) spatula
- Drying oven
- Balance having a capacity of at least 70 grams and capable of weighing to the nearest 0.5 gram.

TEST PROCEDURE

1. Weigh approximately 2000 grams of project aggregate into a pan.
2. Dry the aggregate to a constant weight and allow to cool to room temperature.
3. Add 4 percent water (based on the aggregates dry weight) to the aggregate and mix so that the fines are clinging to coarse particles.
4. Weigh 50 grams of this prepared and wetted aggregate into the 8-oz. (240-ml) capacity container.
5. Immediately add 5.0 grams of the test emulsion and stir with the spatula using a slight lifting action to obtain maximum coating of the aggregate particles. Continue stirring until mixing becomes difficult (usually about 15 seconds).

NOTE: Care must be used so that stirring is not continued after the emulsion breaks. This may cause the asphalt film to be pulled away from the aggregate particle's surface.

6. Remove the mixture from the container and place onto an absorbent paper to aid visual inspection.
7. Visually inspect the mixture to determine if the emulsion has broken completely. Visually estimate the proportion of total aggregate surface area that is coated with asphalt.

INTERPRETATION OF RESULTS

Aggregate that is fully coated, exclusive of pinholes and sharp edges of particles, is reported as being compatible with the asphalt emulsion.

NOTE: Results are largely dependent on the amount of mixing obtained before the emulsion breaks. Major factors affecting results include the type and amount of emulsifier in the emulsion and the cleanliness of the aggregate (amount of fines).