

***Field Test for Compatibility of Aggregate and Emulsified Asphalt***  
( REF: Coating Ability and Water Resistance - AASHTO T59)

**Equipment:**

- One gallon size plastic milk jugs, clean and dry
- One stainless steel tablespoon and one big-spoon~3" wide (24 g delivery) with long handle
- A hose fitted with a spray nozzle where the water pressure can be controlled
- One roll of white paper towels
- Knife or scissors
- A flat surface such as a table, smooth pavement or board
- A disposable five gallon bucket for a waste
- A measuring cup or balance
- Tablespoon or graduated cylinder

**Setup:**

- Cut the plastic milk jugs in half and save the bottoms for mixing containers
- Select a location near a water faucet where an asphalt spill may be easily cleaned up
- The location should be near a flat surface, spread two full size towels at each location where the sample can be deposited

**Procedure:**

- 1) Place one and a half (1 ½) cups (~465 grams) of air-dried Aggregate (78M) sample into the bottom portion of a plastic milk jug.
- 2) Add 0.5 (9mL) tablespoon of water and mix to dampen the aggregate.
- 3) Add one and a half big-spoons (~36 grams) of well-mixed emulsion.
- 4) Stir the mixture with large metal spoon until coated well (about 5 minutes).
- 5) Drain off excess emulsion into the five-gallon waste container. Stir.
- 6) Place 1/2 of the aggregate onto an absorbent paper towel.
- 7) Rinse the other half with gentle spray of water until it runs clear.
- 8) Place this rinsed aggregate on a separate towel.
- 9) Clean up and wait for samples to dry, and then visually inspect them.

As the sample dries the aggregate becomes uniformly coated and rock stick to each other. Should the aggregate be lightly coated with asphalt, bare spots will be observed and the aggregate will not stick together well. The grading is as follows:

GOOD - Some pinpoints and sharp edges exposed.

FAIR - More coated than uncoated aggregate.

POOR - More uncoated than coated aggregate.

SEE NEXT PAGE FOR FIELD WORKSHEET.

**Worksheet for Field Test for Compatibility of Aggregate and Emulsified Asphalt**

- 1.) Place 1 ½ cups (~465 grams) of a split air-dried Aggregate sample in a “cut in half” milk jug (1 gal).
- 2.) Add 0.5 tablespoon (9 mL) of water and mix to wet the aggregate.
- 3.) Tare jug on a balance and add 1 ½ big spoonfuls (35 grams) of emulsion.
- 4.) Stir with large metal spoon until coated well (about 5 minutes).
- 5.) Drain off excess emulsion into a waste container. Stir.
- 6.) Place ½ of the aggregate onto an absorbent paper towel.
- 7.) Rinse the other half with gentle spray of water until it runs clear.
- 8.) Place this rinsed aggregate on a separate towel.
- 9.) Clean up and wait for samples to dry, and then visually inspect them.

**Grading system:**

**GOOD-** Some pinpoint and sharp edges exposed.

**FAIR-** More coated than uncoated aggregate.

**POOR-** More uncoated than coated aggregate.

**\*\*\*A POOR rating on the dry AND rinsed portion indicates incompatible products\*\*\***

**\*\*\*A POOR rating on the rinsed portion indicates incompatible products.\*\*\***

Notes: Sample should dry and cause aggregate to stick together. A “light” coat of asphalt on the aggregate is not acceptable.

**\*\*\*FINAL COMPATIBILITY IS DETERMINED BASED ON THE RINSED PORTION\*\*\***

<b>Name:</b>		<b>Location/Other Info:</b>		
<b>For:</b>		<b>Batch No.</b>		
<b>Phone:</b>		<b>Mfr/Supplier:</b>		
<b>Fax:</b>				
<b>E-mail:</b>				
<b>Date</b>	<b>Aggregate</b>	<b>Emulsion</b>	<b>Results</b>	<b>Remarks</b>
				DRY
				RINSED
				DRY
				RINSED
				DRY
				RINSED
				DRY
				RINSED
				DRY
				RINSED
				DRY
				RINSED
				DRY
				RINSED

**\*\*\*FINAL COMPATIBILITY IS DETERMINED BASED ON THE RINSED PORTION\*\*\***

Revision 2, 20160405; Modified the table to include rating rows for both dry and rinsed portions. Added verbiage about poor being an indication of incompatibility. Added “tablespoon or graduated cylinder” to equipment list.