Welcome!

46th Annual RMACES
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Handling and Storage of Emulsions Q & A Panel

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To Start:

What we are trying to avoid!

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Emulsion Terminology

- Anionic- No Letter
- C - Cationic
- HF – High Float
- SS - Slow Setting
- MS- Medium Setting
- QS – Quick Setting
- RS – Rapid Setting

- Viscosity Designators
- 1= Thin 2 = Thick
- h – Hard Base Asphalt
- s – Contains Solvent
- P – Polymer
- R – Rubber
- L - Latex

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Emulsion Types

Anionic

- HFMS-1
- HFMS-2
- HFMS-2h
- HFMS-2s
- HFMS-2P
- HFRS-2P
- MS-1
- MS-2
- MS-2h
- RS-1
- RS-2
- SS-1
- SS-1h

Cationic

- CMS-1
- CMS-2
- CMS-2h
- CMS-2s
- CMS-2P
- CRS-1
- CRS-2
- CRS-2P
- CRS-2R
- CQS-1h
- CQS-1hL
- CSS-1
- CSS-1h

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Check your Temperature Gauge.

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Loading/Transferring Asphalt Emulsion

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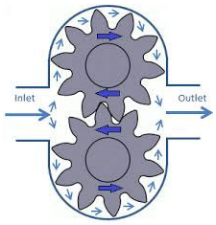
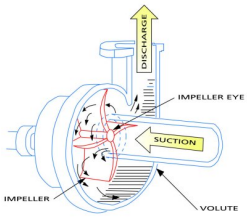
Pumping Emulsions





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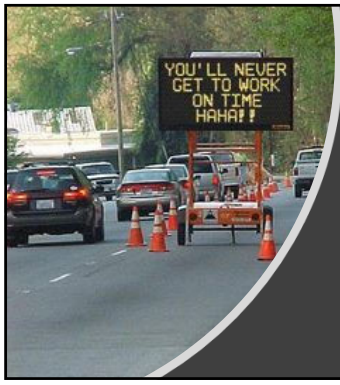

Jobsite Considerations

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Heating and Cooling Emulsions

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Diluting Emulsions

DILUTED EMULSIONS CAN SETTLE QUICKLY

DO NOT STORE DILUTED EMULSION FOR EXTENDED PERIODS OF TIME

GENTLE AGITATION CAN CONTROL SETTLEMENT OF ASPHALT PARTICLES

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HANDLING EMULSIFIED ASPHALTS

DO when heating emulsified asphalt agitate it to eliminate or reduce skin formation.
DO protect pumps, valves, and lines from freezing in winter. Drain pumps or fill them with anti-freeze according to the manufacturers recommendations.
DO blow out lines and leave plugs open when they are not in service.
DO use pumps with proper clearances for handling emulsified asphalt. Tightly fitting pumps can cause binding or seizing.
DO use a mild heating method to apply heat to the pump packing or casing to free a seized pump. Discourage the use of propane torches.
DO warm the pump to about 150°F (65°C) to ease start-up.
DO when a pump is to be out of service for even a short period of time, fill it with No. 1 fuel oil to ensure a free start-up.
DO before diluting grades of emulsified asphalt, check the compatibility of the water with the emulsion by testing in a flask.
DO if possible, use warm water for diluting and always add the water slowly to the emulsion (not the emulsion to the water).
DO avoid repeated pumping and recycling, if possible, as the viscosity may drop and air may become entrained, causing the emulsion to be unstable.
DO guard against mixing different classes, types and grades of emulsified asphalt in storage tanks, transports, and distributors. Separate may water and coagulated asphalt that will be difficult to remove. Because it is hard to determine visually the difference between various emulsified asphalts, always make a trial blend of the newly-delivered emulsion and the stored emulsion before pumping off. Check the trial blend for compatibility.
DO place inlet pipes and return lines at the bottom of tanks to prevent foaming.
DO pump from the bottom of the tank to minimize contamination from skimming that may have formed.
DO remember that emulsions with the same grade designation can be very different chemically and in performance.
DO haul emulsion in truck transports with baffle plates to prevent sloshing.
DO mix by circulation, or otherwise emulsions that have been in prolonged storage.
DO NOT use tight-fitting pumps for pumping emulsified asphalt; they may "freeze."
DO NOT apply severe heat to pump packing glands or pump casings. The pump may be damaged and the asphalt may become even harder.
DO NOT dilute rapid-setting grades of emulsified asphalt with water. Medium and slow setting grades may be diluted, but always add water slowly to the asphalt emulsion. Never add the asphalt emulsion to a tank of water when diluting.
DO NOT recirculate emulsified asphalts far too many cycles. They tend to lose viscosity when subjected to pumping. Also, air bubbles may become entrained which would render the emulsion unstable.
NOTE: Reprinted from Asphalt Institute's/Asphalt Emulsion Manufacturer's Association's "A Basic Asphalt Emulsion Manual". Please refer to this manual for additional information.

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