

# Tack Coat Best Practices

---

Maryland State Highway Administration

Asphalt Institute Tack Coat

Workshop

Gloria Burke 443-386-9266

**504.03.04 Tack Coat.** Prior to application of the tack coat, the surface shall be dry and cleaned of all loose and foreign materials. The tack coat shall be applied uniformly across the surface using an application rate of 0.01 to 0.05 gal/yd<sup>2</sup>.

# Quality Control Plan

---

- QC Plan includes reference to the tack demo
- Info includes tack source, tankage, storage information (tanks, tanker)
- All material shipped to project must be accompanied by a certificate of analysis

## Factors that Influence the Quality Application of Tack Coats:

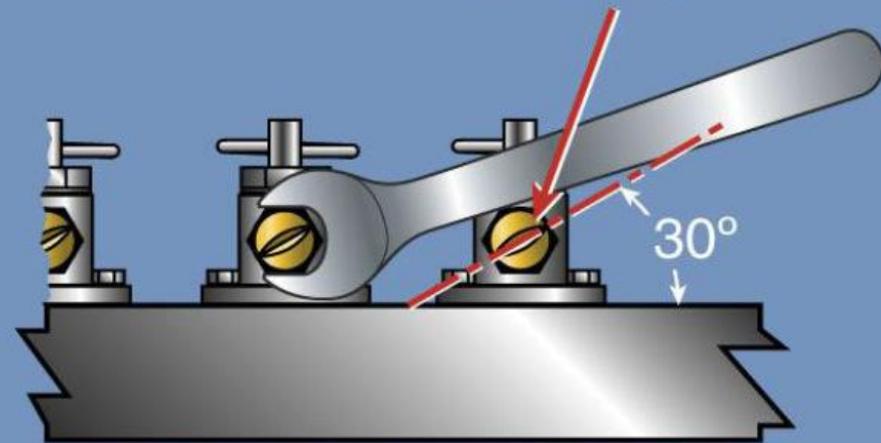
- Calibrated Equipment
- Correct Nozzle Size
- Proper Equipment Maintenance
- Appropriate Application Rate:

The tack coat shall be applied uniformly across the surface using an application rate of 0.01 to 0.05 gal/yd<sup>2</sup>

# Proper Equipment Maintenance

- Nozzles must be clean/unclogged and should be adjusted to the proper angle.
- The height of the spray bar should be approximately 12" above the surface.
- If equipped with one, the material strainer should be checked daily and cleaned if necessary.

**Nozzle Slot 30° from Spray Bar**



**Spray Bar (bottom view)**





## **Appropriate Application Rate:**

It is essential that the application is uniform. Distributor application rates are dependent upon pump rates and speed of the truck.







## **Where to Place Tack Coat:**

Between the existing pavement surface and the new hot mix asphalt overlay, including milled surfaces.

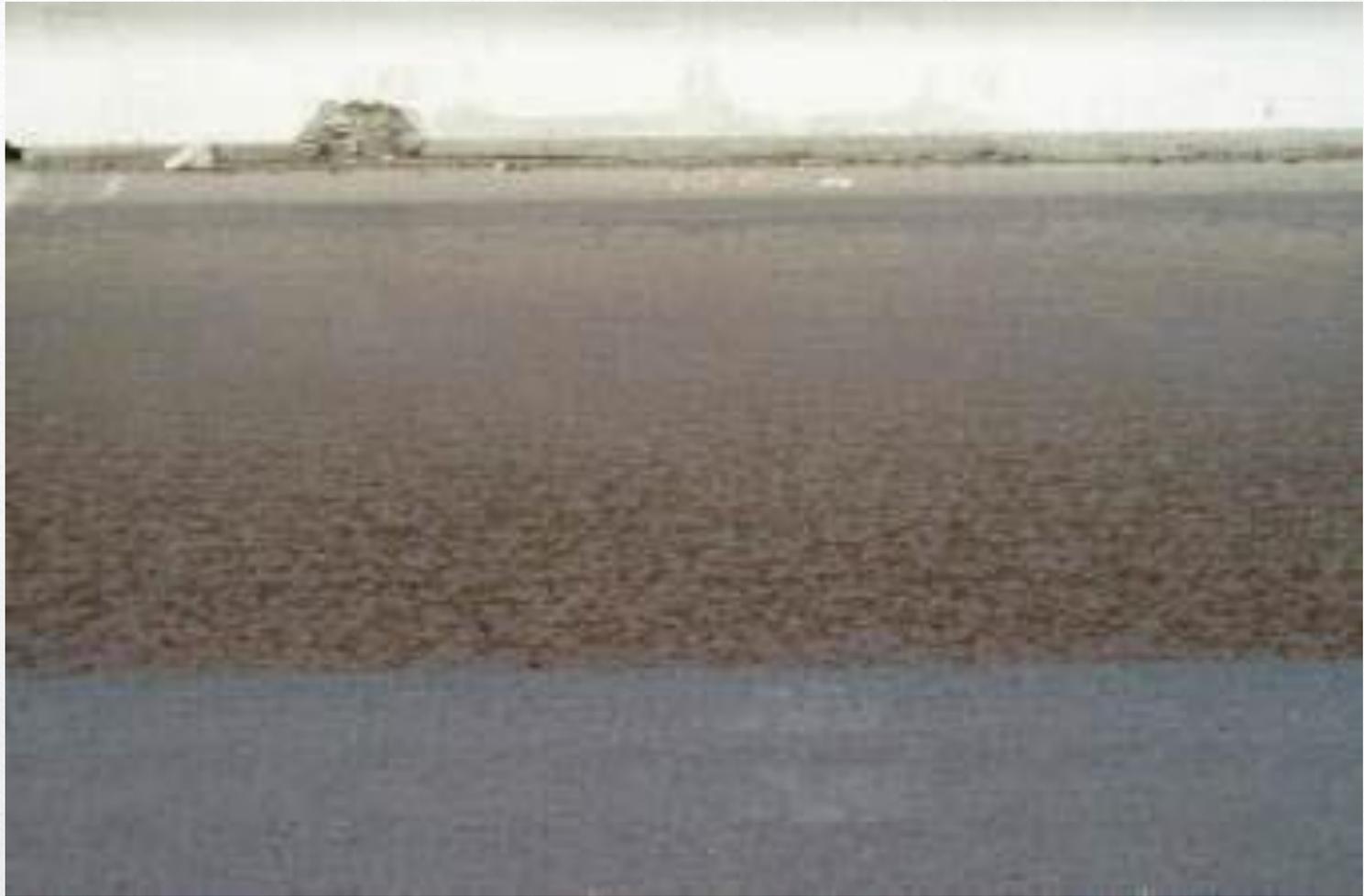
Between the layers of each lift of hot mix asphalt.

At any vertical surfaces that the new hot mix asphalt will be placed against (curbs, gutters, and construction joints).

## **BREAK VS SET**

**Tack Coat Break**—When water separates from the emulsion and the color of the tack coat begins to change from brown to black.

**Tack Coat Set**—When water has completely evaporated from an emulsion leaving a thin film of asphalt binder on the pavement.



The brown color indicates that the freshly placed emulsion tack coat has not yet broken.



The same tack coat 23 minutes later. The brown color now appears in splotches, indicating it is beginning to break.

# Cleaning the Surface

- Sweeping the surface is critical prior to tack coating. Dust or debris on the surface will prevent the emulsion from bonding to the pavement.
- In cases where there is a significant amount of very fine dust, such as a milled surface that has been left open to traffic, a vacuum or mechanical sweeper may be required to prevent tack from sticking to equipment tires.



Tack build-up due to dusty surface



Tack Coat tracking resulting in no tack in wheel paths.

## **Tracking Best Practices:**

When tracking of tack coat materials by vehicle tires occurs, clean the affected areas and reapply the tack coat before resuming paving operations.

# Where to Apply Tack

Tack is to be applied to both longitudinal and transverse joints. Each lift shall be tacked.

The contractor must tack contact surfaces of curbing, gutters, manholes, and other structures with a thin, uniform coating of tack coat material before placing the asphalt mixture against them.

This can be accomplished by use of a spray wand or by using a specially aimed nozzle on the distributor truck.









Although we can design, construct, and rehabilitate each layer independently, the layers must be bonded together for the pavement to respond to loads as intended.

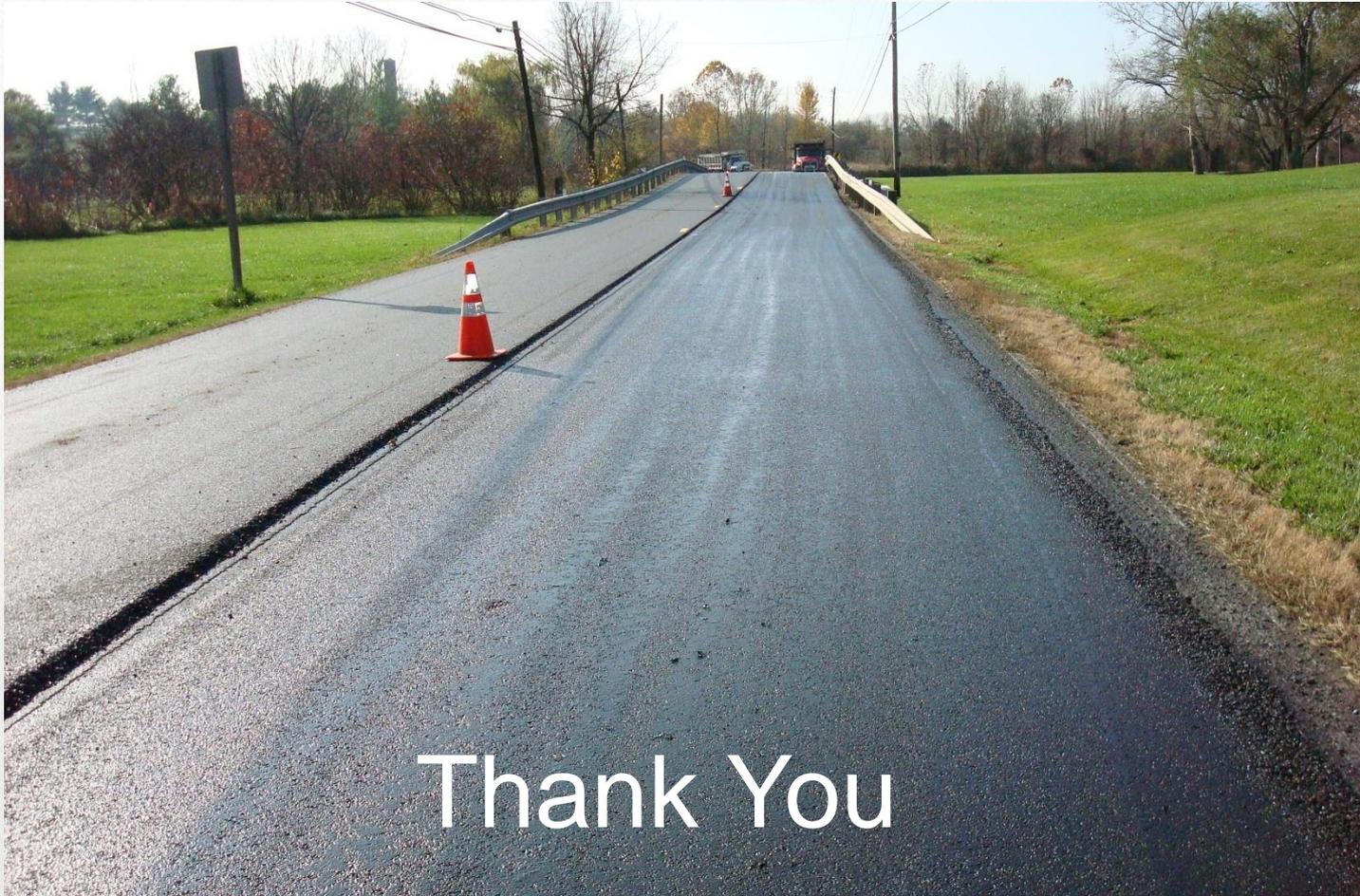
**That is the purpose of tack coats.**



**Days later!**

Courtesy of Road Science

**Tack is such a cheap component that it makes little sense to short-change this critical step and introduce so much risk.**



Thank You