

**CITY OF COLUMBUS, OHIO**

**SUPPLEMENT 1053  
STORAGE AND INTRODUCTION OF  
ANTISTRIP ADDITIVES INTO AN  
ASPHALT CONCRETE PLANT**

**October 31, 2011**

**1053.1 Scope**

This supplement covers methods of storing and adding antistrip additives into a bituminous aggregate base or asphalt concrete mix.

**1053.2 Storage of Antistrip Additives**

Store liquid antistrip material in accordance with the manufacturer's specifications. Store hydrated lime in a covered bin. If the hydrated lime is stored over the winter, store it in air tight packaging.

**1053.3 Methods of Adding Antistrip Additives**

Ensure the method of adding the antistrip additive into a mix is accurate to within  $\pm 10$  percent of the amount to be added and capable of being easily and accurately calibrated. Prior to the start of production, obtain Laboratory approval of the antistrip additive storage and feed systems.

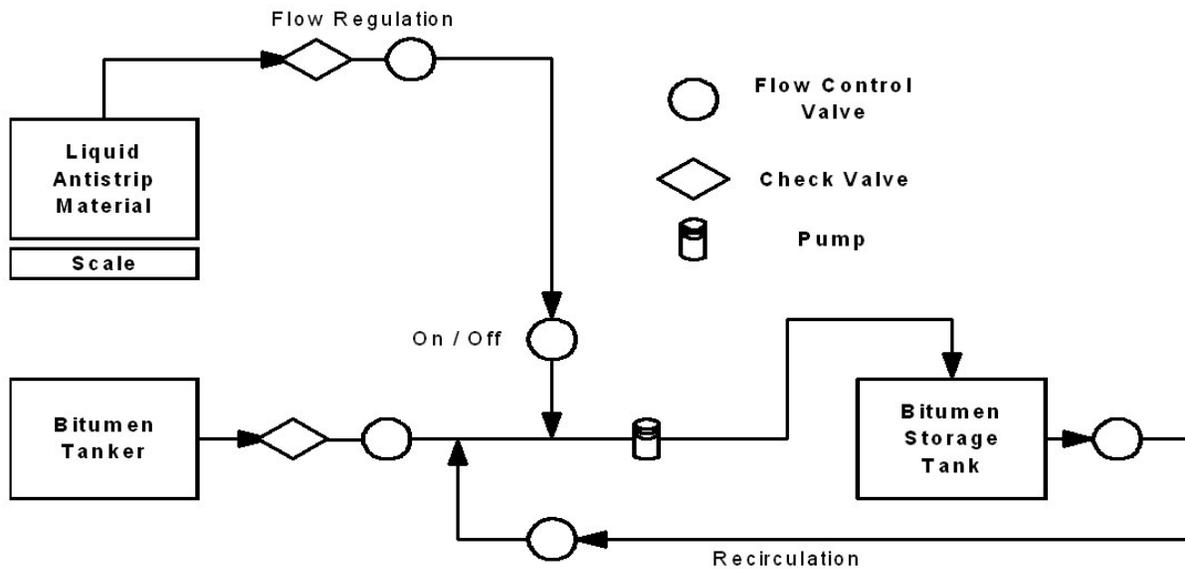
Add the antistrip additive to the asphalt concrete plant using one of the following methods:

**Method A - Liquid Antistrip Material Added After the Asphalt Binder Storage Tank**

In this method ensure the liquid antistrip material feed system adds the material to the asphalt binder line between the asphalt binder storage tank and the plant injection point on a batch plant or between the asphalt binder flow meter and the plant injection point on a drum mix plant. In addition, ensure the feed system is equipped with a flow meter, which signals if the liquid antistrip material is or is not being added to the asphalt binder line and interlocked with the plant controls so mix production will cease if liquid antistrip material flow is interrupted.

**Method B - Liquid Antistrip Material Added Before the Asphalt Binder Storage Tank**

In this method ensure the liquid antistrip material feed system adds the material in accordance with the following diagram:



The amount of liquid antistripping material required is calculated in accordance with the following formula:

$$\text{Pounds (kilograms) liquid antistripping material} = \text{Pounds (kilograms) asphalt binder} \times \text{Percent liquid antistripping material required}$$

After each new load of asphalt binder is mixed with the liquid antistripping material, recirculate the combined material in the asphalt binder tank for a minimum of 1 hour, except when virgin asphalt binder is present in the asphalt binder storage tank.

When 10 percent or less of the asphalt binder storage tank is filled with virgin asphalt binder, the Contractor is allowed to blend asphalt binder and liquid antistripping material into the tank if the rate of addition of liquid antistripping material is adjusted to have a final concentration in the tank of the required amount. The combined material in the asphalt binder storage tank must be recirculated a minimum of 2 hours.

When more than 10 percent of the asphalt binder storage tank is filled with virgin asphalt binder, then the excess must be recirculated while adding liquid antistripping at the required rate, and prior to adding additional asphalt binder to the asphalt binder storage tank. Continue the recirculation for a minimum of 30 minutes after liquid antistripping flow has stopped.

Failure to properly account for proper procedures will require Method A be used.

### Method C - Hydrated Lime

Ensure the hydrated lime feed system:

1. interlocks with the aggregate feed system to maintain the specified treatment

2. interlocks with the plant controls so mix production will cease if hydrated lime flow is interrupted
3. is capable of adding hydrated lime without it getting caught in the exhaust system or creating dust

During production, add the hydrated lime such that it coats the aggregate prior to adding the asphalt cement. When a batch plant is used, add the hydrated lime to the aggregate near the center of the weigh hopper or as approved by the Laboratory and dry mixed a minimum of 5 seconds prior to adding the asphalt cement.

#### **1053.4 Record Keeping**

For liquid antistripping material, maintain a running total log of the kilograms (pounds) of liquid antistripping material used and kilograms (pounds) of asphalt binder used. Update this log daily for Method A or after each delivery by an asphalt binder tanker for Method B and ensure it is available for review by the Laboratory. At the end of the project, provide this log to the Engineer.

#### **1053.5 Calculations**

For liquid antistripping material stored in the drum, the scales can be checked by calculating the amount of liquid antistripping material used in pounds (kilograms) as follows:

1. Measure the distance between the top of the drum and the surface of the liquid antistripping material in inches (meters). [H]
2. Measure the diameter of the drum in inches (meters). [D]
3. Calculate the liquid antistripping material used in pounds (kilograms) [W] using the following formula:

$$W = D^2 \times H \times \text{specific gravity of liquid antistripping material} \times K$$

where K = 0.0284 for English calculation (785.4 for metric calculation)