

3360300 ASPHALT RUBBER BINDER
COMMENTS FROM INDUSTRY REVIEW

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Comment: (1-4-10)

We appreciate the opportunity to respond with comments to the proposal to add a maximum viscosity to the **ARB specification section (3360300)**.

Having been both a hot mix producer and placer as well as currently being in the asphalt rubber binder supply business I will share some thoughts that I believe would be beneficial to all parties if considered. There have been issues (chasing void content as produced in dense graded mixtures , and some placement issues as well) through the years when utilizing these products. Some can be attributed to lengthy storage times and the nature of the product as produced (viscosity increasing through time) etc.

The idea of adding a controlling factor to the high side of viscosity as opposed to simply a minimum viscosity in an attempt to gain more consistency possibly in the ARB themselves as well as the finished hot mix product is appreciated. My belief, and all that I've witnessed up close to date, tells me that consistency of the asphalt rubber binder being used is what helps us achieve success in the end product, without a doubt. This consistency is needed both within loads and load to load. My experience however does not show me that a number of consecutive loads, as produced, running 6.0 or 7.0 poises on ARB-5 or 16 or 17 poises on ARB 12 creates any quality or control issues. ARB 5 with one load running 4.0 poises and the next running 9.0 then back to 4.0 again is the kind of scenario where we may start to see some issues. This was my experience as a hot mix producer and that observation is echoed by a number of hot mix producers / users of these products that I have conversed with on this subject over the past few months.

The above said I would suggest that we could add one more line in the notes area that would read as follows:

A viscosity reading higher than the maximum range number will be acceptable if the running average of three tests is within the range listed above and the reading is not greater than 20% higher than the maximum number listed in the range. (Or something similar)

This would still ensure consistency is being maintained while not penalizing for ARB 5 product, as an example, that generally is running close to 6.0 poises as opposed to generally running close to 4.0 poises, since the 6.0 poises product is not a "lesser" product than the 4.0 poises product, nor does it create any greater issues to deal with, one versus the other. Again, consistency is our friend here.

Response:

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Comments: (1-5-10)

Please find below my comments for the above proposed specification change for Asphalt Rubber Binder.

Inclusion of AASHTO T 316 viscosity method is a good move forward for improving the precision of viscosities taken of asphalt rubber binders.

1. The Dip-N-Read Viscometer does not have a temperature controller to maintain a consistent temperature of the sample. This method probably has a greater variability in the test results than the T 316 viscosity method which does have a temperature controller that maintains the sample to ± 1.0 C. I recommend that in the event of a discrepancy the use of AASHTO T 316 Rotational Viscometer method be required as the referee method.

2. In the proposal the viscosity requirement will change from a minimum viscosity value to both an upper and lower viscosity limit. However the key ingredient, tire rubber, which increases or decreases the ARB viscosity, is still specified by weight to be at a minimum value for each ARB product. It is possible to add the minimum amount of tire rubber the specification requires and still exceed the maximum viscosity limit.

Also as ARB materials are held in tanks the viscosity can and will change significantly, usually going higher with the age of the material.

I suggest that the minimum ground tire rubber content be changed to have a tolerance of perhaps $\pm 0.5\%$ by weight to allow the manufacturer to make adjustments to the ARB product in order to stay within the viscosity range that will be required. An alternative would be to specify the ARB viscosity to be within a running average of X Poises ± 50 percent of the average which would be plotted on a control chart.

Response:

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Comments: (1-7-10)

As a manufacturer of Asphalt Rubber Binders, we have no concerns regarding the proposed specification changes.

Response:
