The percentage of Recycled Asphalt Pavement (RAP) in Hot-Mix Asphalt (HMA) design is growing, as demand for high RAP Mix increases, due to economic and environmental factors. In High RAP Mix designs, both the high and low temperature pavement performance need to be enhanced to ensure that premature failures do not occur. Using a soft base asphalt binder rejuvenator or recycling agent improves this cracking resistance, but there are differences between a rejuvenator and a recycling agent and their respective benefits.

REJUVENATING AGENTS

Rejuvenating Agents affect both the physical and chemical properties of the virgin asphalt binder and the RAP binder in the mix design. They add the following benefits:

1. Improve the low temperature PG grade and increase crack resistance in the HMA.
2. Improve workability/compaction of the RAP mix design.
3. Restore the aromatic resins to the high RAP asphalt binder that were lost due to oxidative field aging.
4. Do not cause continuous age softening of the RAP asphalt binder which could lead to increased rutting potential.
5. Increase aromatic resins lost during oxidation.
6. Reduce the high temperature Performance Grade (PG).

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RECYCLING AGENTS

Recycling Agents are also capable of reducing the viscosity and improving the low temperature properties of the high RAP binder. Here’s where they differ from a rejuvenating agent:

1. A recycling agent does not add the aromatic resins to balance the properties of the high RAP binder and repair the oxidative aging.

2. Without the aromaticity restored, the high RAP mix design will exhibit premature rutting due to continued age softening of the RAP binder.

It is not only important to have a balanced mix design for volumetrics, but also to ensure that the design will provide long term performance without increased rutting and/or premature cracking.

This is the Hydrolene difference: Hydrolene Oils rejuvenate and improve the high RAP mix you recycle.

WE’RE HERE TO HELP.
For immediate and helpful answers to your technical questions, call 1-800-TECH-REP (832-4747)
For Marketing, call 1-800-395-2786