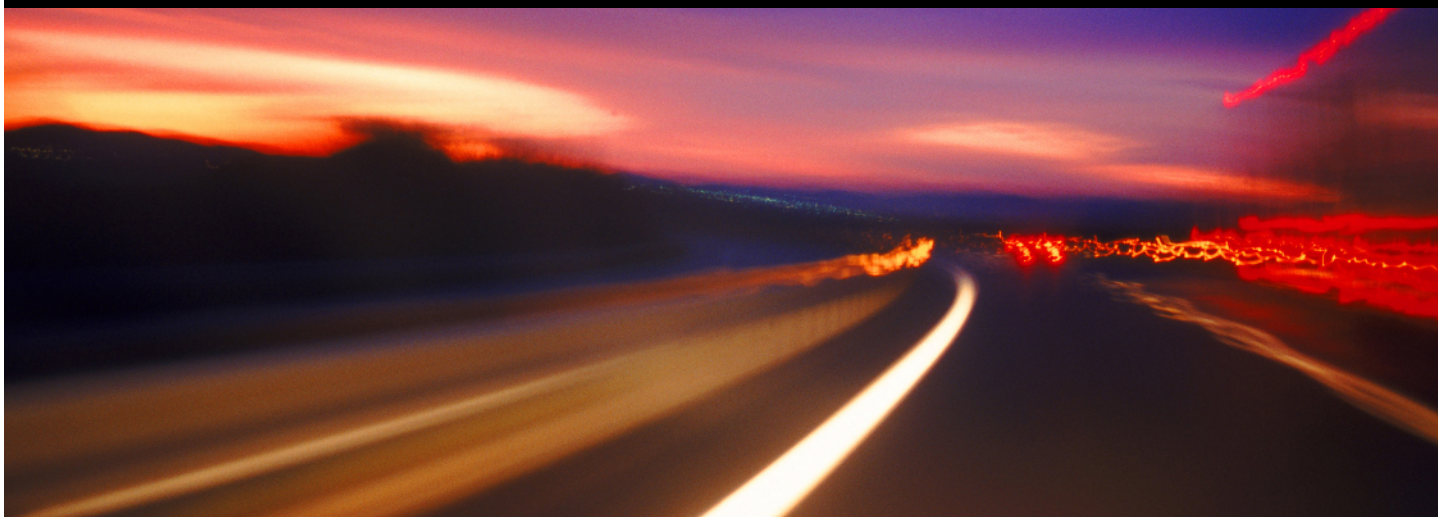
PQ Corporation

Advera® WMA

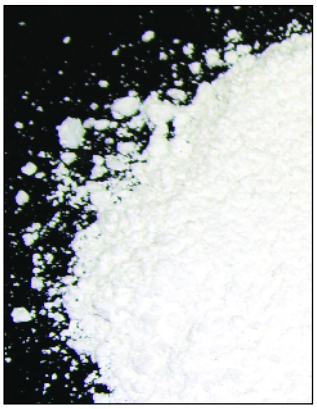
Time-Released Technology



Advera® WMA
Warm Mix Asphalt

Benefits:

- Reduces energy costs
- Improves compaction for density bonuses
- Increases RAP and RAS content
- Extends haul distances
- Extends paving season
- Reduces emissions up to 60% at plant and jobsite



Advera WMA Powder

Uses:

- Traditional Hot Mix Asphalt binder & wearing courses
- Polymer Modified mixes
- High RAP containing mixes
- Rubber Asphalt
- SMA
- Friction course
- Thin overlayments

Advantages:

- Production and compaction at true warm mix temperatures ~ 250°F
- Does not change the PG grade of the Asphalt
- Flexibility of dosing – doesn't require exact science to succeed
- Portable and stationary units for Batch and Drum plants
- Can be tested in the laboratory
- Made in North America

- Augusta, GA
- Jeffersonville, IN
- Thailand
- United Kingdom
- Netherlands

What is *Advera®WMA*?

Advera WMA is an aluminosilicate or hydrated zeolite powder.

Typical Properties:

Form	Free Flowing Powder
Color	White to Grey
Moisture Loss @ 800°C	18-22 wt %

Advera® WMA

Warm Mix Asphalt

How does *Advera WMA* work?

Hot mix asphalt concrete (HMA) is produced at temperatures between 300 – 330°F. With the addition of up to 0.25 wt% *Advera WMA* (5 lbs *Advera WMA* per ton of asphalt concrete), asphalt mixes can be produced at temperatures 50 – 70°F lower. No mix design change is needed.

Advera WMA produces a sustained, time-release foaming of the asphalt binder at a true warm mix asphalt production temperature, 250°F. *Advera WMA* contains 20% moisture which is structurally and chemically bound in the zeolite. The zeolite releases its moisture over a sustained period of time causing lasting micro-foaming. The foam is not lost in the mixing process. Lower production and compaction temperatures are realized versus other foamed systems

Plant and field personnel will not see any physical or operational difference in the performance or handling of the asphalt concrete. There will be a significant reduction in odor, heat, and blue smoke from the mix. The paving temperature, as well as the production temperature, will be 50 – 70°F cooler. Normal compaction patterns should be utilized. Improved densities should be noted. During compaction, the steam that improved the workability of the asphalt concrete will be compressed out of the mix. Should any residual moisture remain in the asphalt concrete, it should be reabsorbed by the *Advera WMA* and bound in place. Once in place, the *Advera WMA* behaves as a mineral filler.

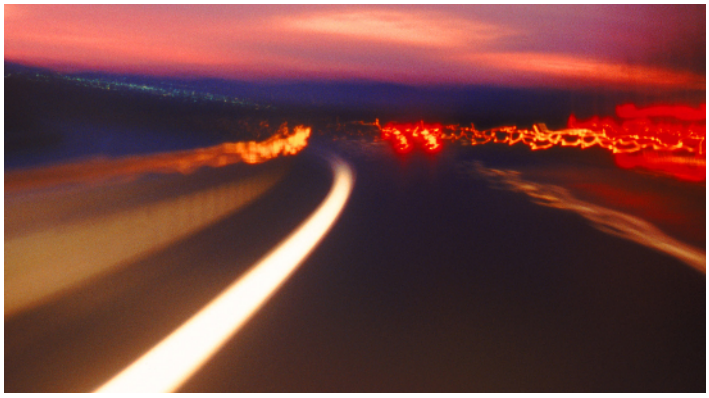
Better workability means easier handling and higher densities even with stiff mixes. The ability to increase RAP and RAS, obtain density bonuses, extend the paving season and increase haul distances are measurable benefits of *Advera WMA*.

Lower process temperatures mean reduced emissions. VOC's, CO_2, SOx and NOx emissions are reduced up to 60%. Reduced emissions result in a healthier environment around an asphalt concrete plant, during transport of the mix, and at the paving site. This is better for your employees and the public. Lower temperatures also equate to energy savings up to 30%.

For further information, contact PQ Corporation Customer Service at 1-800-944-7411.

Or in Canada at 416-255-7771.

Visit us on the Web at www.adverawma.com



PQ Corporation is a leading producer of silicate, zeolite, and other performance materials serving the detergent, pulp and paper, chemical, petroleum, catalyst, water treatment, construction, and beverage markets. It is a global enterprise, operating in 21 countries on five continents, and along with its chemical businesses, includes Potters Industries, a wholly owned subsidiary, which is a leading producer of engineered glass materials serving the highway safety, polymer additive, metal finishing, and conductive particle markets.

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