

A high-angle, wide shot of a two-lane asphalt road that curves gently through a dense forest. The road is flanked by metal guardrails and green grass. The sun is low on the horizon, casting a warm, golden glow over the scene and creating long, soft shadows. The sky is a mix of light blue and soft white clouds. The overall mood is serene and natural.

**KRATON™**

**SYLVAROAD™ RP1000**  
Performance Additive

Take Recycling to the Next Level



# BOOST THE PERFORMANCE OF HIGH RECYCLED CONTENT PAVING MIXES

Kraton’s SYLVAROAD™ RP1000 Performance Additive takes asphalt recycling to the next level through high-end reuse of reclaimed asphalt, which improves resource efficiency by reducing the need for new aggregates and bitumen and significantly decreasing carbon footprint produced by road construction. The pine chemical additive enhances asphalt mix performance such that

high recycled content can be used in surface layer paving mixes, rather than only in sub-surface layers. Derived from Crude Tall Oil (CTO), a renewable raw material that is a by-product of the paper industry, this bio-based additive makes effective use of existing resources to ensure road construction is safer and more sustainable.

## ENHANCED PROFITABILITY

SYLVAROAD RP1000 Performance Additive is designed to fully restore the binder properties of reclaimed asphalt. When the product is added to the reclaimed asphalt, the aged binder is fully mobilized and can be 100% credited toward the mix’s final binder content.

The additive allows reclaimed asphalt to be reused in top layers. The material maintains strong performance over time, even in cold

weather conditions, ensuring longer life cycles and lower maintenance.

SYLVAROAD RP1000 Performance Additive enables better use of the asset value of the existing road system. Using high percentages of reclaimed asphalt results in significant cost savings due to a reduced need for new materials and potential disposal fees while increasing the lifetime of the road.

## FOR A BETTER PLANET

SYLVAROAD RP1000 Performance Additive makes road construction more sustainable by enabling high-end reuse of reclaimed asphalt instead of simply recycling it as “black rock”. This reduces the use of virgin materials.

The product does not release any known harmful components during production and application.

It enables a lower drying temperature in the drum, which leads to lower energy consumption and reduces the CO<sub>2</sub> footprint of the pavement.

SYLVAROAD RP1000 Performance Additive is bio-based and made of renewable raw materials. It is non-hazardous, safe to handle and environmentally friendly. The additive is a non-labeled product under REACH registration.



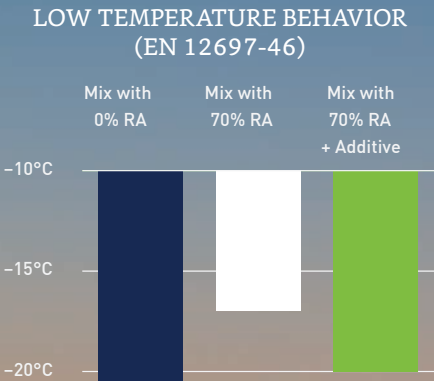
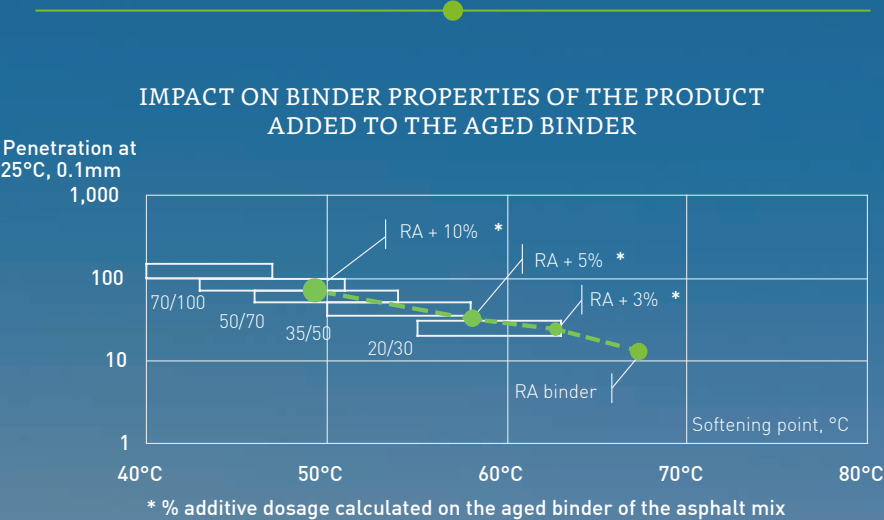
Winner of Responsible Business Award 2016  
in the category Sustainable Innovation

# OPTIMAL ASPHALT MIX PERFORMANCE

Less than a kilogram of SYLVAROAD™ RP1000 Performance Additive is needed per ton of asphalt to restore the original properties and meet the most challenging pavement requirements for rutting and cracking. The water sensitivity is restored to the level of a new mix. This is particularly relevant for wearing courses.

The additive improves the low-temperature

performance of mixes in surface layers without compromising high-temperature performance. The product recovers the fatigue resistance for base layers while maintaining an adequate modulus. It upgrades the old binder toward the required bitumen grade and remains active in the mix, which ensures optimal asphalt mix performance.





## IMPROVED PROCESS EFFICIENCY

The mixing process in the asphalt plant is optimized by matching the viscosity of aged and added virgin binder.

SYLVAROAD™ RP1000 Performance Additive was developed to obtain the required bitumen quality when added directly to the reclaimed asphalt. The product is easy to handle, store and process. It improves production capacity and efficiency due to less clogging and sticking of high-viscosity bitumen throughout the plant process.

The additive is thermally stable, even at elevated temperatures. This makes it easier to add the product to reclaimed asphalt before it enters the heating drum, which optimizes production time and provides more efficient mixing. SYLVAROAD RP1000 Performance Additive can also be added in the pug-mill or directly into the new binder, and is compatible with warm-mix technologies and anti-stripping agents.

All these features make the mix optimal for high-quality asphalt that will perform over the lifetime of the road.

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**“According to our evaluation, SYLVAROAD RP1000 Performance Additive fully restores the flexibility of the mix especially with regards to the cracking susceptibility at low temperature.”**

*– Professor M. Wistuba, Head of Braunschweig University's pavement engineering Centre, Germany*

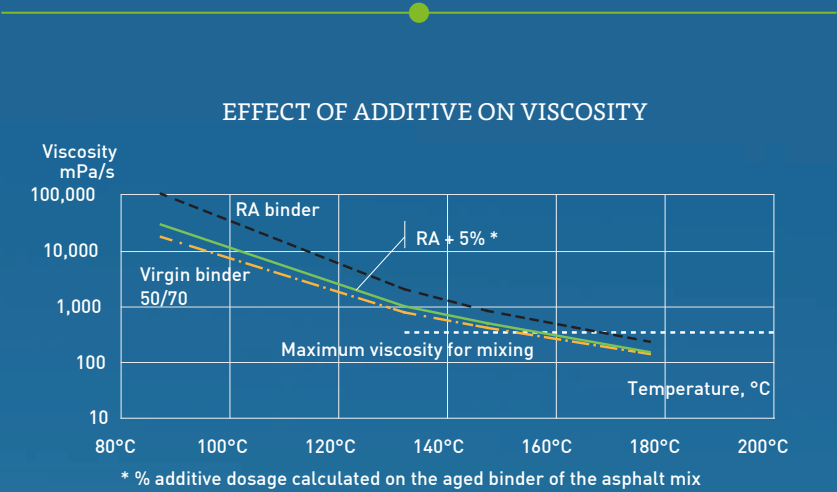




# EASY APPLICATION AND PAVING PROCESS

SYLVAROAD™ RP1000 Performance Additive considerably improves processability at the mix plant and on the job site, with operators praising

the product for its good workability. The required degree of compaction can also be obtained at lower temperatures.



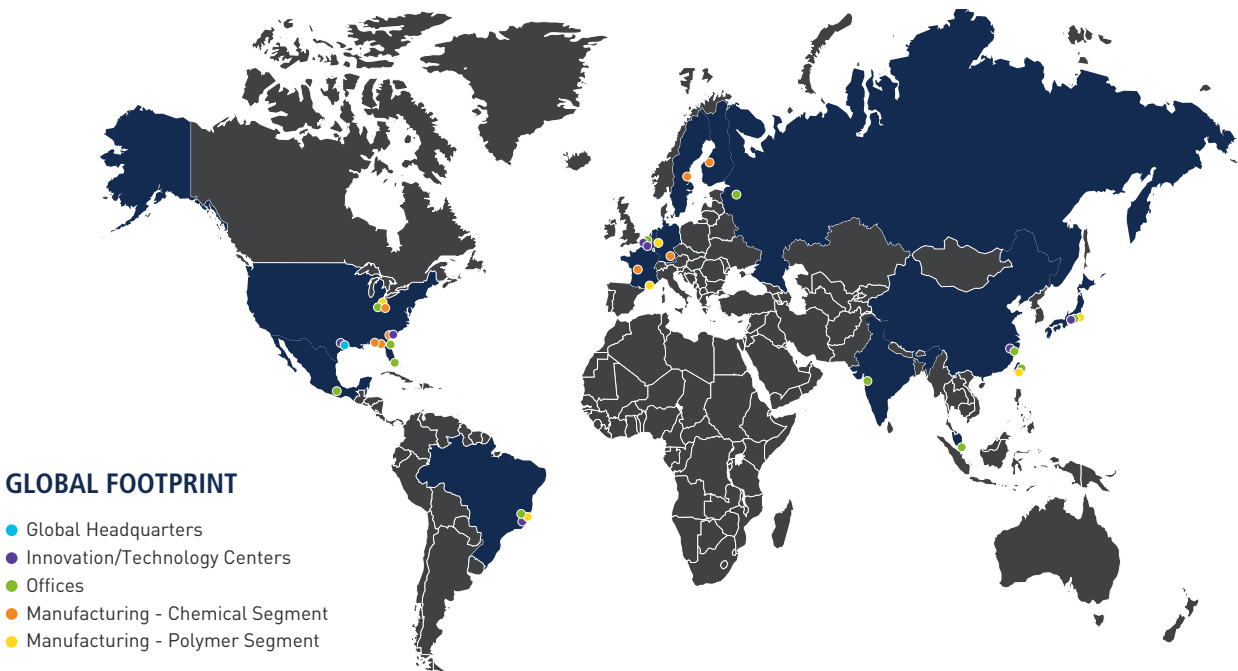
**“Because of the new production method and the use of the bio-based rejuvenation product, SYLVAROAD RP1000 Performance Additive, the properties are fully equivalent to ordinary asphalt.”**

*– KWS Infra, in response to the 100% recycled asphalt project in Rotterdam, The Netherlands*



ABOUT KRATON CORPORATION

Kraton Corporation (NYSE: KRA) is a leading global producer of styrenic block copolymers, engineered polymers and chemicals derived from pine wood pulping co-products that are used to enhance the performance of end-use products that touch our daily lives. Through its Polymer segment, Kraton offers value-enhancing products that are used in a wide variety of applications including consumer and personal care items, adhesives and coatings, electronics, medical supplies, automotive components, polymer modification, compounding solutions, and paving and roofing materials. Through its Chemical segment, Kraton offers specialty chemicals that serve key adhesive, tire and road & construction end-use markets, as well as a broad range of end use applications served through its Performance Chemicals business. Kraton offers its products to a diverse group of customers in over 70 countries worldwide.



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