RALUMAC®
NOVA CHIP®
ROAD ARMOR®
STRATA®
BONDTEKK™
STYLINK®
FORTRESS®
REFLEX®
RESTORE®
ENCORE®
RECYCLE PLUS®
What Is The Recycle Plus® Process?
- Pre-qualification of RAP
- Uniformity
- Deleterious materials
- Sand equivalence
- Emulsion designed for process
- High asphalt content coats both fine and coarse materials
- Solventless
- Controlled break
- Engineered mix design with performance-related specifications
- Raveling resistance
- Rutting resistance
- Moisture resistance
- Thermal cracking resistance
- Technical services by Road Science
- Mix design

Recycle Plus® Advantages
- Lower-cost paving material
- Reduces raw material costs
- Environmentally friendly
- A use for unwanted RAP
- Reuses existing materials
- Uses solventless emulsion
- Reduces energy costs
- Recycled pavement can itself be recycled
- Reliable engineered performance
- Excellent public acceptance of recycling

Where Should Recycle Plus® Recycled Asphalt Pavement Be Considered?
- Roads needing increased structural capacity or widening
- Unpaved roads with adequate structure
- No structural failures
- Surface or base mix
- Less than one hour from production site
- Typically not for high-volume traffic highways; confer with your Road Science representative if considering this application.

Contact your local Road Science™ representative if you have available RAP and need a low-cost, effective paving material.
Recycle Plus® recycled asphalt pavement is a low-cost and high-quality paving material. It is manufactured at a central plant by crushing reclaimed asphalt pavement (RAP), treating it with emulsion and then transporting it to the construction site where it is paver-laid, compacted and covered with a surface treatment.

There are many roads that need to be upgraded, yet funds to do the job are limited. Meanwhile, there are piles of available RAP milled from rehabilitation projects. Recycling the RAP material restores its value with minimal cost, stretching road funds.

The Recycle Plus® process is engineered to use the RAP for upgrading secondary roads. A 2002 FHWA memorandum states that recycled materials should get first consideration in materials selection for any project. With dwindling aggregate supplies, difficult-to-get permits for new quarries and growing RAP piles, the Recycle Plus® process is an ideal solution. In fact, roads in California, New Mexico and Kansas, among many others, have benefited from the Recycle Plus® process.

“When you recycle this material you want to try and move it up the ladder as far as you can go to have it be a substitute for the more high-priced materials.”

California Asphalt, June 2003
Ralumac® micro-surfacing is a surface treatment for preventive maintenance, rut filling and improving skid resistance on asphalt or concrete pavements. The Ralumac® polymer modified asphalt emulsion, additives and aggregates are mixed and placed in a continuous process by a single machine.

Pavement Preservation: Lower Costs, Higher Quality

The right treatment on the right road at the right time. The Federal Highway Administration issued a position statement in late 2004 that encourages street and highway agencies to extend their dollars by the judicious use of maintenance treatments. Many departments have found that maintenance costs are two- to 10-times lower than rehabilitation costs, and that the preservation program results in a significantly higher overall quality road system.

The ideal maintenance treatment should be workable, cost effective, lower in raw materials usage and provide quick traffic return. For more than 25 years, Ralumac® micro-surfacing has been the right treatment for many pavements, from residential streets to high-traffic interstates. A process continually improved by Road Science technologists, the Ralumac® system is a high performance, cost-effective surface treatment that preserves pavements and improves surface profile and skid resistance.

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Encore® Recycling Benefits

- Aged, distressed surfaces replaced with new surfaces
- Deformations leveled
- Surface cracking removed
- Crowns re-established
- Clearances and curb heights maintained
- Economically reuses existing materials
- Can, itself, be recycled
- Quick construction and immediate traffic return
- The Encore recycled pavement can be higher quality than the original
  - The rejuvenator oils restore the chemical composition of the oxidized, aged asphalt
  - The process completely coasts the aggregate
  - The Stylink polymer modified asphalt improves durability, flexibility, adhesion, strength and resistance to temperature extremes, rutting and cracking
  - Encore mixes have shown 35 percent higher strengths than recycled mixes made with conventional, off-the-shelf emulsions

Where Can Encore® HIR Be Used?

- Highways, city streets, country roads
- Structurally sound pavements
- Distressed surfaces
- Good drainage
- Materials that are not stripping sensitive

On a side-by-side project comparing conventional and Encore emulsion hot in place recycling on Kansas State Route 170, the conventional side cracked after two years, while the Encore® emulsion continues to give excellent service. Many miles of city streets, county roads and state highways have benefited from the Encore® solution in the last four years.

Do you have pavements that would benefit from the Encore® solution? Road Science™ can help determine the right recycling process for your project. Contact us.

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Ralumac® Micro-surfacing Components

- Polymer modified asphalt emulsion formulated for the process
- Materials selected for each location
- 100 percent crushed fine aggregate
- Mineral filler
- Additives as needed to control application process
- Laboratory mix design for each project
- Quick continuous mixing and application of ultrathin surface
- Ruffling normally with two passes (rut box or scratch course and final surface)

A successful Ralumac® micro-surfacing project can last from five to 12 years, depending on application and project location conditions. Ralumac® micro-surfacing also is environmentally friendly; the cold application saves valuable energy and can be recycled at a later date.

Contact your local Road Science™ representative for more information about the Ralumac® micro-surfacing system, how to use it to maximize your maintenance dollars, or for other preventive maintenance and rehabilitation solutions.

Ralumac® Treatment Advantages

- Fills ruts, can be applied at varying thicknesses
- Restores texture, improves skid resistance
- Fast application (500 tons per day)
- Cures quickly for early traffic return (typically 20-60 minutes)
- Nighttime or daytime application
- Ultrathin for maintaining overhead clearances, curb reveal and drainage
- Black surface
  - Looks like hot mix surface
  - Delineates pavement markings and shoulders
  - Environmentally friendly cold process
  - Cost-effective preventive maintenance seals and protects pavement

Where Should Ralumac® Be Used?

- Structurally sound asphalt or concrete pavements with good drainage
- Very high to low-volume roads
- Moderate severity surface distresses
  - Rutting
  - Raveling
  - Bushing
  - Polished
- Low severity cracking
- Oxidized surfaces
- Surfaces needing improved skid resistance
- Minor leveling
- May be used as an interlayer

Encore®

Hot In-Place Recycling

Encore® hot in-place recycling uses an innovative emulsion specially developed for the process. The emulsion includes rejuvenator oils for bringing the aged asphalt back to life and Stylink® polymer modified asphalt for added adhesion, elasticity, temperature resistance and durability. The problem is everywhere: streets and highways with cracked and distressed surfaces. Standard overlays may cover up, but they don’t fix the cracks and they may result in problems with overhead clearances and curb heights. Hot in-place recycling (HIR) disrupts crack patterns, maintains pavement height and recycles valuable paving materials, all with minimal traffic disruption.

Formulated specifically for the hot recycling process, Encore® emulsion contains rejuvenating oils and Stylink polymer modified asphalt to improve the elasticity, coating, moisture resistance, rutting resistance and cracking resistance of the recycled pavement. A recent FHWA memorandum stated that recycling should be considered as an alternative for all paving projects. The Encore® process has proven to be an excellent, cost-effective alternative for many highway agencies.

“It’s cost effective. It saves resources. It fixes bad roads—and fixes them quickly.”

Roads & Bridges, May 2004
NovaChip® ultrathin bonded wearing course is a high-performance surface course for preventive maintenance or new construction. It is used over either asphalt or concrete pavements. NovaChip® surface course consists of a heavy application of Stylink® polymer modified asphalt emulsion (NovaBond™) followed by an ultrathin gap-graded HMA. Both applications are placed by a single machine.

High traffic interstates in North Carolina, Alabama, Kansas and Texas. A mountain highway leading to Lake Tahoe. A tunnel through the Rockies in Colorado. A neighborhood street in Wichita. Busy streets in Pennsylvania. A new side street off the Las Vegas strip. The award-winning NovaChip® process is proving to be the ideal pavement surface for miles and miles of streets and highways throughout the world. The quick construction gives a long-lasting, ultrathin, firmly bonded open surface. This surface improves visibility in wet weather, lowers tire noise, typically improves skid resistance and protects the pavement. NovaChip® ultrathin bonded wearing course combines the strength of hot mix with the flexibility of thin maintenance treatments.

Where Can Restore® HIR Be Used?
- Highways, city streets, country roads
- Structurally sound pavements
- Distressed surfaces
- Good drainage
- Materials that are not stripping sensitive

On a side-by-side project comparing conventional and Restore emulsion hot in-place recycling on Kansas State Route 170, the conventional side cracked after two years, while the Restore emulsion continues to give excellent service. Many miles of city streets, county roads and state highways have benefited from the Restore solution in the last four years.

Do you have pavements that would benefit from the Restore solution? Road Science™ can help determine the right recycling process for your project. Contact us.

Road without NovaChip® surface

"NovaChip® surface has significantly higher pavement surface friction numbers compared to dense-graded HMA wearing course."

National Center for Asphalt Technology (NCAT) Report 97-5

Road with NovaChip® surface
NovaChip®

What Is The Novachip® System?

A single-pass surface treatment for preventive maintenance and new construction

1. NovaBond® polymer modified emulsion membrane
   - Stylink® polymer modified asphalt
   - 0.13 - 0.3 gallon per square yard
2. Ultrathin high-performance hot mix
   - High-quality aggregate
   - Gap-graded
   - Total thickness: 3/8 inch to 3/4 inch
   - Mix designed specially for process
3. Placed with special equipment
   - Applies both emulsion and hot mix in single pass
   - Special combination tamper bar - vibratory screed

Novachip® Advantages

- Protects pavement
- Seals out water
- Superior bonding – resists raveling and delamination
- Durable skid resistance
- Reduces user delays
- Fast construction and quick traffic return
- Night construction
- Retains clearances, curbs
- Lowers life-cycle cost
- Combines the benefits of both stone matrix asphalt (SMA) and open-graded friction courses
- SMA high-binder content at interface with existing pavement and SMA-type gradation benefits
- Resists wear and rutting up to 10 years or longer with crack sealing
- OGFC open-surface benefits
- Reduces noise
- Reduces backspary

Where Should Novachip® Surfaces Be Placed?

- Structurally sound concrete or asphalt pavements
- Distresses listed below, not to exceed medium severity as defined by SHRP distress manual:
  - Rut depth <1/2 inch
  - Transverse or longitudinal cracking
  - Block, edge or reflective cracking
  - Bleeding
  - Patches or potholes (both should be repaired)
  - Spalling of longitudinal and transverse joints
- “D” cracking should not exceed low severity
- Blowups should not be present
- Water bleeding and pumping should not be present
- Faulting of transverse joints and cracks should not exceed 3/8 inch
- Raveling may be high severity
- Polished aggregate may be present
- NovaChip® system is applicable to all traffic levels

The NCAT (National Center for Asphalt Technology) test track near Auburn University in Alabama is one of the world’s leading sites for pavement research studies. Built in the summer of 2000, NCAT employs four oversized trucks to drive the track for most of every day – the goal being 10,000,000 ESALs (1.7 million truck miles) in three years, simulating approximately 10 to 15 years on a typical road. After considering several possible surface treatment solutions, NovaChip was selected as the first maintenance treatment for one section of the track. The section performed so well, it was left for the second round of testing. Two other states also chose NovaChip surfaces for their sections in the second round of testing.

NovaChip® surfaces have exceeded expectations on very high traffic urban interstates, under studded tires on mountain roads at high elevations, in tunnels and on residential streets throughout the world. Most of the earliest projects constructed in 1993 in the U.S. are still performing well. Several reports by respected transportation research centers have documented the outstanding performance of NovaChip® surfaces.

Contact your local Road Science™ representative for more information on the NovaChip™ process and how it can help prolong your pavements while improving visibility, noise and typically skid resistance.

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Restore® Hot In-Place Recycling

Restore® hot in-place recycling uses an innovative emulsion specially developed for the process. The emulsion includes rejuvenator oils for bringing the aged asphalt back to life and Stylink® polymer modified asphalt for added adhesion, elasticity, temperature resistance and durability.

The problem is everywhere: streets and highways with cracked and distressed surfaces. Standard overlays may cover up, but they don’t fix the cracks and they may result in problems with overhead clearances and curb heights. Hot in-place recycling (HIR) disrupts crack patterns, maintains pavement height and recycles valuable paving materials, all with minimal traffic disruption.

Formulated specifically for the hot recycling process, Restore® emulsion contains rejuvenating oils and Stylink® polymer modified asphalt to improve the elasticity, coating, moisture resistance, rutting resistance and cracking resistance of the recycled pavement. A recent FHWA memorandum stated that recycling should be considered as an alternative for all paving projects. The Restore® process has proven to be an excellent, cost-effective alternative for many highway agencies.

“It’s cost effective. It saves resources. It fixes bad roads—and fixes them quickly.”

Roads & Bridges, May 2004

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What Is The ReFlex® CIR Process?

It is a partial depth in-place recycling of an existing, worn pavement. The first step is an engineered laboratory design procedure using samples taken from the pavement to be recycled. Based on that design, a continuous train of equipment:

- Mills all but an inch or two of the existing pavement,
- Grinds and sizes the reclaimed asphalt pavement (RAP),
- Places it back on the pavement,
- Mixes it with a new chemistry asphalt emulsion,
- Performance-related design specifications
- Compacts the newly recycled pavement, and
- Leaves an improved base ready for a surface treatment or overlay.

The ReFlex® Partial Depth CIR System Includes:

- Emulsion with innovative chemistries
- Solventless
- Formulated for CIR with controlled break
- Allows higher mix asphalt content for better coating, cohesion and adhesion
- Climate specific binder
- Formulated for needs of each project
- Engineered system
- Defined sampling procedure
- Defined mix design protocol
- Superpave Gyratory Compacted (SGC) mixes at field moisture content
- Quality-assurance and quality-control recommendations
- Performance-related design specifications (Strength, Raveling, Moisture susceptibility, Thermal cracking, Technical services by Road Science, Mix design and performance testing, Contractor and DOT training, Job site support, as necessary)

ReFlex® CIR Advantages:

- Engineered reliability - more consistent than other CIR methods
- Performance - more resistant than other CIR methods to:
  - Raveling
  - Rutting
  - Moisture damage
- Early strength
- Earlier compaction and traffic return in two to three hours
- Application of surface in three to seven days
- Wider temperature window for construction
- Typically uses existing equipment
- Higher average daily production
- No re-roll needed
- No fog seal needed
- Environmentally friendly
- Solventless
- Reuses existing materials
- Extends pavement life

Where Should The ReFlex® Process Be Used?

- Severely distressed pavements
- 12-25 years old (typically)
- Thick enough (typically 4+ inches) to leave sufficient existing pavement (typically 1 inch) or base capable of supporting equipment train
- Flexible pavement (or bituminous layer over PCC)
- Upgrading
- To meet structural requirements
- To widen road
- Structurally sound base
- Good drainage
- ReFlex® CIR does not stabilize base

ReFlex® emulsion cold in-place recycling is a system solution designed to cut life-cycle costs and improve performance. With Road Science technologies, we work together with the road owner, contractors and pavement crew to find and deliver the right solution for a given road. These technologies help make improved performance a reality.

A recent FHWA memorandum requires designers to evaluate recycling alternatives for all paving projects. In project after project, engineers found the award-winning ReFlex® process to be the right solution for their distressed pavements.

Contact your local Road Science™ representative to use the engineered ReFlex® process for longer-lasting roads at lower costs.

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RoadArmor® High Performance Chip Seal

RoadArmor® high performance chip seal is a single pass surface treatment for pavement preservation on low-to-high volume asphalt roads. A Stylink® polymer modified asphalt emulsion and a durable single-sized aggregate are both continuously applied by a single machine.

The Pavement Preservation Lead States have found that a sound pavement preservation program costs three to 10 times less than rehabilitation and results in a higher overall quality road system. A Transportation Research Board study concluded that chip seals are one of the most cost-effective pavement preservation tools. However, some agencies have discontinued the use of such surface treatments because they have not always given the expected performance. Problems can occur because of the complexity of controlling the multitude of variables (including materials, equipment, site selection, surface preparation, weather, traffic control, operator training). Only a few agencies use chip seals on high-volume roads because of prolonged user delays and unpredictable performance.

RoadArmor® high performance chip seal is an exciting new process that uses superior materials and combines the construction processes, taking out many of the variables and yielding a much more reliable, yet still cost-effective surface treatment.

Contact your local Road Science™ representative to use the engineered RoadArmor® process for longer-lasting roads at lower costs.

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South Dakota DOT, Roads & Bridges, July 2004
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RoadArmor® High Performance Chip Seal Components

- Emulsion: ultra-fast setting, polymer modified
- Aggregate: single-size gradation, angular, durable
- Application Process: continuous, synchronized, one pass
- Specifications: performance related
  - Sweep test (emulsion/aggregate compatibility)
  - Aggregate gradation and quality (reliability and durability)
  - Application equipment (reliability)
  - Construction requirements (reliability)

RoadArmor® Surface Advantages

- Quick traffic return
  - Sweeping typically begins in less than an hour
- Continuous process
- Reliable performance
- Designed for low risk of vehicle damage
- Durable aggregate macro-texture and skid resistance
- Thick membrane without bleeding
  - Protects underlying pavement
  - Long life
- Quiet surface
- Low-cost pavement preservation technique

Where Should RoadArmor® High Performance Chip Seal Be Used?

- Good condition roads with low-to-moderate surface distresses
- Locations where user delays and/or vehicle damage are a concern
- Low to high volume roads
  - Highways, city streets, county roads
- Pavement preservation
  - Seals and protects pavement
  - Increases skid resistance

The RoadArmor® process was developed for cost-effective pavement preservation and low user delays. It is suitable for use on high traffic volume roads that are in good condition but with minor surface distresses. It seals and protects pavements, avoids the need for costly rehabilitation, and reduces the risk of failures associated with bleeding, drilling and chip loss. It has been designed to reduce the risk of vehicle damage, and generally the surface is ready for sweeping within about an hour.

How is the RoadArmor® system different from other surface treatments? It combines several processes, removing many of the variables that can cause construction headaches and quality problems. The RoadArmor® system uses innovative technologies for ultra-fast breaking emulsion chemistry, as well as performance-related specification tests.

RoadArmor® surfaces have been placed with pavement temperatures ranging from 65°F to 130°F and relative humidity ranging from 12 percent to 98 percent. Projects have been successful on streets and highways with traffic levels from 500 to 26,000 ADT. More than 200 federal, state, city and county highway engineers agreed that RoadArmor® high performance chip seals can be a valuable part of pavement preservation programs.

RoadScience™ RoadArmor® solution includes site selection guidelines, surface preparation guidelines, training and technical service.

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ReFlex® Cold In-Place Recycling

ReFlex® emulsion cold in-place recycling is a reliable, engineered process for partial depth recycling to improve the serviceability of severely distressed asphalt pavements having structurally sound bases and good drainage. The recycled pavement is sealed or overlaid as needed.

Engineered Reliability

Many highway engineers have found cold in-place recycling (CIR) to be a cost-effective method of rehabilitating aged pavements. The ReFlex® system brings CIR to a new level. It uses innovative technologies for an engineered process that takes the guesswork out of cold recycling. ReFlex® CIR combines early strength with long-term durability. The result is faster constructibility, better road performance and more reliable results.

“The [ReFlex®] CIR would save the [Tazewell] county at least $700,000 over all the other alternatives over the next 15 years.”

Roads & Bridges, May 2004
The Strata® reflective crack relief system protects existing pavement structures from water damage and delays reflective cracking in new surfaces. It includes a highly flexible, impermeable hot mix asphalt interlayer and a recommendation for the hot mix asphalt overlay.

One of the biggest problems facing today’s highway engineers is reflective cracking of hot mix overlays over concrete and composite pavements. The cracks lead to a much more serious problem as they allow moisture to infiltrate and deteriorate the underlying pavement structure. The result is loss of pavement structural strength and very poor rideability.

The innovative Strata® system answers the need for protecting overlaid pavements. An impermeable interlayer prevents moisture from deteriorating existing pavements, delays reflective cracking in the overlay and allows the Strata overlay to provide a safer, smoother riding surface for longer periods. Using conventional HMA equipment and procedures, Strata® construction is faster and easier than other crack relief methods and rehabilitation, minimizing user delays. The system extends paving dollars and preserves the existing pavement structure.

Contact your local Road Science™ representative to stretch your paving dollars with Fortress®.

“We wouldn’t have the money to improve nearly as many roads if we took a more traditional route.”

AEMA Newsletter, 2003

“The Strata® interlayer has delayed the first appearance of cracking and remained intact and impermeable even after surface cracks appeared.”

Illinois State Toll Highway Authority Roads & Bridges, October 2004

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What Is The Strata® Reflective Crack Relief System?

- A highly flexible, impermeable hot mix asphalt interlayer
- Thin (1 inch) hot mix asphalt (HMA) type mixes
- Fine aggregate (readily available)
- Highly elastic polymer modified asphalt
- High asphalt content
- Recommendation for HMA overlay
- Superpave or stone matrix asphalt (SMA) type mixes
- SBS polymer modified SHRP+ spec, 98 percent reliability
- Performance-related specification for interlayer
- Mix design
- Flexural beam fatigue certification

The Strata® System Advantages

- Significantly delays reflective cracking longer than fabric and HMA overlays
- Impermeable interlayer protects pavement structure from moisture damage
- Lengthens pavement service life
- Recyclable
- Other benefits
  - Standard HMA production and construction methods
  - Uses readily available aggregates
  - Faster construction than fabric and grid
  - Lower user-delay costs

Where Should The Strata® System Be Used?

- Concrete pavements slated for overlays
  - Structure needed protection from moisture
  - Low to moderate severity cracks
  - If not dowelled, the concrete slabs must be stable
  - User-delay concern – congestion makes maintenance delays difficult

Asphalt and composite pavements slated for overlays

- Verify that stripping is not a concern in underlying asphalt
- Moderate to severe distresses that must be repaired prior to construction

The Strata® interlayer mix is easily mixed, placed and compacted with conventional equipment. The overlay normally can be placed immediately, but the Strata® interlayer is sufficiently stable to be left open to traffic for a few days, if necessary, before the overlay is placed.

The interlayer is extremely resistant to fatigue cycling. The graph below shows that while a typical PG 64-22 Superpave overlay will withstand 2,000 cycles under high strain test conditions, and a polymer modified PG 76-28 overlay will withstand 6,000 cycles under the same conditions, the Strata® interlayer will stand up to at least 100,000 cycles.

Fortress®
Full Depth Reclamation
Granular Base Stabilization

Fortress® full depth reclamation/granular base stabilization provides a flexible — yet strong — base for structurally upgrading pavements. Following an engineered design, the existing pavement and/or granular base is uniformly stabilized six- to 10-inches deep using a solventless asphalt emulsion, and then compacted in preparation for the new surface.

Gravel roads. Roads constantly needing maintenance. Dust, potholes and ruts. Increasing traffic on paved roads without enough structural capacity. Paved roads past their service lives. Narrow roads. There are miles and miles of roads that need upgrading, yet funding never seems to keep up with the need – especially for base correction and conventional hot mix asphalt full depth paving.

The Fortress® system was developed to be a cost-effective solution that makes use of the existing materials to build structure into the pavement. The process addresses the problems with an engineered design, performance-related specification and a new-technology asphalt emulsion formulated specifically for the reclamation process.

County roads in Minnesota, Nebraska, Georgia, Missouri and Illinois. State and U.S. highways in Texas, Oklahoma and Missouri. Commercial roads in Colorado. These are just a few of the places that enjoy the benefits of Fortress strengthened pavements. The Fortress® system is a first step to upgrading roads, eliminating dust problems, protecting existing pavement structure and increasing property values. It is a means to provide economic benefits to both the agency and road users. The Fortress® base is strong, but flexible, and can be used for future stage construction to upgrade roads and highways.

“After two years of service, [Chisago] county is pleased with the cost and performance of the newly paved [Fortress] roads... After one year of cure, the analysis shows that the stabilization improved the effective granular equivalent factor by 40 percent.”

Journal of the Transportation Research Board 1869, 2004
Agencies today are in need of more cost-effective solutions to these menacing distresses. Road Science™ introduces BondTekk™, a broad range of bonded applications to address specific Agency needs. In addition to consistency and reliability, this turnkey, engineered approach provides clear and measurable benefits to alternative methods.

And we have more great news: BondTekk™ applications can be used with various mix types and incorporate performance-related specifications.

BondTekk™ is Road Science™ innovation at its finest: cutting-edge technology with a broad array of technical support services to help you achieve success.
# A Comparison

Bonded pavement offerings at Road Science™.

Which Road Science™ bonded pavement applications best fit your needs? How do they differ? And what can you expect when partnering with Road Science? Take a look at how it all hits the road.

<table>
<thead>
<tr>
<th>BondTekk™</th>
<th>NovaChip®</th>
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<tbody>
<tr>
<td>Bonded Pavement Technologies</td>
<td>Ultrathin Bonded Wearing Course</td>
</tr>
<tr>
<td>Gold Standard</td>
<td>The Classic</td>
</tr>
<tr>
<td>BondTekk™ suite of technologies to support bonded pavement applications.</td>
<td>NovaChip® ultrathin bonded wearing course.</td>
</tr>
<tr>
<td>Specification Focus.</td>
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</tr>
<tr>
<td>Performance-related tests to address specific Agency needs.</td>
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</tr>
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<td>Features.</td>
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<tr>
<td>NovaBond® polymer modified emulsion membrane. Spray paver used to place. Engineered mix design.</td>
<td>Polymer modified emulsion membrane. Spray paver used to place. Works with various mix types. Able to use conventional mixes, in most cases.</td>
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<td>Performance-related binder tests to measure flexibility.</td>
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<td>Features.</td>
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<td>Applicable for more distressed roads. Focus on additional crack resistance.</td>
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# It's All About You

**BondTekk Features and Benefits.**

You want quality. Security. Cost-efficiency. Whatever your needs, Road Science’s technical support services bring the world to your fingertips. How can you benefit when partnering with our team of professionals?

## The Agency

**Feature.** Superior application method allows better tack materials to be specified, as well as a greater amount of tack to be placed.

**Benefit.** Non-tracking Application

- Smoother Ride
- Less Cracking
- Better Sealing of Underlying Pavement
- Better Bond to PCC and Asphalt Pavement
- Smaller Construction Zone

**Plant & Field Support**

- Quality Applicators
- Consistency & Reliability
- Site Assessment
- Crew Training
- Mix Design & Formulation
- On-Site Quality Control

Contact your local Road Science™ representative for more information on BondTekk™ technology, and how it can meet your needs.
Polymer Modified Asphalt Advantages

- Improves resistance to rutting, thermal cracking and moisture damage
- Improves adhesion to aggregates and resistance to raveling
- Networked elastomeric polymer gives improved durability to the pavement
- Goes beyond Superpave PG specifications
- Lowers life-cycle costs
- Supplied ready-to-use
- Looks, ships and stores like conventional asphalt
- Doesn’t separate; no agitation needed
- Easy to handle with no special equipment needed
- Can be recycled
- A long history of performance

Where Can Stylink® Asphalts Be Used?

- Hot mix asphalt mixtures
- Stone matrix asphalts (SMA)
- Gap-graded mixtures
- Open-graded friction courses (OGFC)
- Thin overlays
- Hot recycling
- Drainable mixes
- Seal coats
- In-place recycling
- Tack coats
- Cold mixes
- Stockpile patch mixes
- Ultrathin bonded wearing courses

Stylink® polymer modified asphalts are designed for use where conventional asphalts do not provide the desired performance. Stylink® pavements give excellent results with high-volume roads, busy intersections, severe climates, marginal aggregate mixes and anywhere agencies would like to reduce life-cycle costs.

Contact your local Road Science™ representative to learn more about using Stylink® asphalt to reduce life-cycle costs with longer lasting pavements.
Stylink® Polymer Modified Asphalt

Stylink® polymer modified asphalts are elastomeric binders formulated to reduce life-cycle costs by increasing durability and reducing temperature susceptibility. They are supplied ready-to-use for hot mix, as well as in a variety of emulsion and high-technology products. The Stylink® polymer’s networked structure results in a binder that doesn’t separate and is easily handled using conventional equipment and procedures.

The Stylink® system consists of styrene-butadiene block co-polymers that are chemically reacted within the asphalt. Stylink® modified asphalts are specially formulated so the polymer and asphalt are compatible. This results in a homogeneous, networked structure. The network means the Stylink® modified asphalt:

- Has the strength and elasticity of the polymer
- Is smooth and uniform, with no polymer segregation
- Is less temperature sensitive to resist rutting and cracking
- Meets Superpave Performance Graded (PG) asphalt binder specifications and meets performance expectations

Millions of tons of Stylink® modified asphalt have been used on U.S. pavements since the early 1980s with excellent performance. Numerous research studies by prestigious transportation research institutes have shown the superiority of Stylink® polymer modified asphalt over both conventional and other modified asphalts.

Stylink® modified asphalt not only meets PG specifications, it also has the added durability derived from the networked elastomeric polymer. In a 2003 survey, state materials engineers reported that 20 states have used “SHRP Plus” specifications with extra requirements for PG grades with desired elastomeric properties.