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.

“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
What Is The Strata® Reflective Crack Relief System?

- A highly flexible, impermeable hot mix asphalt interlayer
  - Thin (1 inch) hot mix asphalt (HMA)
  - 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
  - Minimum overlay thickness based on traffic
- Performance-related specification for interlayer
  - Mix design
  - Flexural beam fatigue certification (AASHTO T-321)

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 needing protection from moisture
  - Low to moderate severity cracks
  - If not doweled, the concrete slabs must be stable
  - User-delay concern – congestion makes maintenance delays difficult

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.

Contact your local Road Science™ representative for more information on Strata® system performance and how it can address your overlay problems.