SHRP2 SOLUTIONS
TOOLS FOR THE ROAD AHEAD

Guidance and Tools Support Wider Use of Composite Paving System Construction

New guidance to designing and constructing long-life composite pavement systems that provide durable, sustainable aggregate surfaces at a potentially lower cost than conventional pavement

Many agencies today are faced with the challenge of being sustainable (that is, using recycled materials) and economical in rehabilitating pavements, while also providing for a long service life. A few agencies today also face the challenge of having a limited source of quality aggregates, thus having the added cost of importing materials.

Composite pavement systems that combine new asphalt over concrete, and/or two-lift concrete generally have a long service life with excellent surface characteristics, structural capacity, and the ability to be rapidly renewed. Yet, these composite pavement systems are not widely used in the United States and few roads are intentionally designed to utilize composite pavements because reliable guidance for designing and using these materials has been lacking. Transportation agencies require guidance, specifications, objective and reliable performance data, and life-cycle cost analyses to support use of these pavement systems.

New Composite Pavement Systems

The Solution

SHRP2's *New Composite Pavement Systems (R21*) provides detailed performance data on existing composite pavement systems, and offers step-by-step guidance on two promising types of composite pavements (Hot-Mix Asphalt (HMA) over Portland Cement Concrete (PCC) and PCC over PCC [constructed wet on wet]) using procedures consistent with the Mechanistic-Empirical Pavement Design Guide (MEPDG).

The new guidelines provide **practical recommendations for construction specifications and techniques, life-cycle costing, quality management procedures, and training materials.**

Composite pavement systems save time and money

FOCUS AREA:
Renewal (R21)

Tools include models, techniques, construction specifications, quality management guidelines, training tools, and case studies.

Save Lives

- Excellent skid resistance is due to high-quality top layer.
- Pavement is resistant to cracking, fatigue, and wear.

Save Money

- Thicker bottom layer is made of lower-cost material with recycled content.
- Higher quality, functional upper layer is thinner and renewable for additional savings.

Save Time

- Replacement or retexturing of top layer is economical and quick.
- Reduced maintenance needs limit traffic disruption.

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The Benefits

Photo Credit: Michael Darter, Applied Research Associates

With the new guidance, models, techniques, and specifications, state and local departments of transportation and other organizations can have confidence that the composite pavement systems they install and maintain will be long-lasting and have predictably low life-cycle costs. Agencies will no longer need to develop construction specifications and quality management guidelines on their own, but can instead consider using these. The training tools and case studies include all relevant design and construction issues and are essential to widespread adoption and use of composite pavements.

How can you learn more?

Updates on current implementation efforts can be found on the FHWA's GOSHRP2 website, http://www.fhwa.dot.gov/goshrp2/, and the AASHTO SHRP2 site, http://shrp2.transportation.org. Research reports are available through TRB at http://www.trb.org/Publications/Publications.aspx. The 2008 Survey of European Composite Pavements is available at http://www.trb.org/Publications/Blurbs/163693.aspx.

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About SHRP2 Implementation

The second Strategic Highway Research Program is a national partnership of key transportation organizations: the Federal Highway Administration, the American Association of State Highway and Transportation Officials, and the Transportation Research Board. Together, these partners conduct research and deploy products that will help the transportation community enhance the productivity, boost the efficiency, increase the safety, and improve the reliability of the Nation's highway system.

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