

AASHTO Technology Implementation Group
Nomination of Technology Ready for Implementation
2005 NOMINATIONS DUE BY FRIDAY, SEPTEMBER 9, 2005

Sponsoring DOT	1. Sponsoring DOT (State): Illinois			
Primary Technical Contact	2. Name: Joseph W Vespa			
	Organization: Illinois Department of Transportation			
	Address: 126 E Ash St			
	City: Springfield	State: IL	Zipcode: 62704	
	E-mail: vespajw@dot.il.gov	Phone: 217-782-6538	Fax: 217-782-2572	
Technology Description	3. Name of Technology: Interlayer Stress Absorbing Composite (ISAC)			
	4. Briefly describe the technology. ISAC consists of a three-layer system. The top layer is a high strength woven geotextile to resist stresses caused by underlying pavement movements. This layer has the ability to, due to its weaving, expand like a chain link fence. This movement dissipates the stress caused by the movement of the underlying pavement. Typically, this geotextile has a tensile strength greater than 4,000 lb./in. (700 N/mm) at 5% strain (ASTM D 4595). High strength is needed to ensure that, when the geotextile is expanded to its full extent, the geotextile strength is greater than the strength of the bituminous concrete overlay. The bottom layer is a low strength, nonwoven, geotextile (meeting AASHTO M-288-92). The middle layer is a modified rubberized asphalt layer to absorb the strain energy and bond the two geotextiles together. The system bridges across the joint or crack and dissipates stresses resulting from opening or closing movements. ISAC is bonded to the existing pavement using a tack coat and then the overlay is placed.			
	5. Briefly describe the history of its development. Reflective cracking of bituminous concrete overlays has long been a problem in pavement rehabilitation. Various types of interlayer systems and fabrics have been used to eliminate or slow the development of reflective cracks. These methods and products have had mixed results. In 1993, the University of Illinois completed research directed by the Illinois Department of Transportation on a prototype Interlayer Stress Absorbing Composite (ISAC). Other ISAC test sections were placed on five asphalt concrete overlay (ACOL) projects between 1997 and 2000. Some of these ACOL sections contain other reflective crack control methods, such as Sand Anti-Fracture (SAF) layer, strip, and area-wide reflective crack control fabric.			
State of Development	6. For how long and in approximately how many applications has your organization used this technology? IDOT has used ISAC on an experimental basis since 1997 on four projects. IDOT has monitored one project placed by the City of Champaign, IL.			
	7. What additional development is necessary to enable routine deployment of the technology? Reduction in cost of ISAC to make it more affordable for more projects.			
	8. Have other organizations used this technology? If so, please list organization names and contacts.			
	Organization	Name	Phone	E-mail
	City of Champaign, IL	Kevin Trueblood	217-403-4710	Kevin.Trueblood@ci.champaign.il.us
Potential for Payoff	9. What benefits has your organization realized from using this technology? Include cost savings, safety improvements, transportation efficiency or effectiveness, environmental benefits, or other advantages over other existing technologies. Two year delay of reflective cracks. Cost analysis should be performed. The product's cost limits the benefit to certain projects.			
	Implementation Potential			
	10. Please describe what actions another transportation agency would need to take to adopt this technology. Contact a supplier to obtain installation costs and details. Installation costs may vary by region. The installation and asphalt costs will determine the number of cracks that can be treated with ISAC.			

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	<p>11. What is the estimated cost, effort, and length of time required for procurement or adoption by another transportation agency? There will be a learning curve in the proper placement of the product to the pavement to ensure that the product does not move during placement of the first overlay lift.</p>
	<p>12. What organization(s) currently supply and provide technical support for this technology? None.</p>
	<p>13. Please describe any legal, regulatory, social, intellectual property, or other issues that could affect ease of implementation. There is only one producer at this time.</p>
Willingness to Champion	<p>14. Is the sponsoring DOT willing to promote this technology to other states, if partially supported by the AASHTO Task Force on Technology Implementation? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>
Date Submitted	<p>15. Date: 9/8/2005</p>

16. Please include image(s) of sketches or photographs, if available Image(s) are attached.*

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