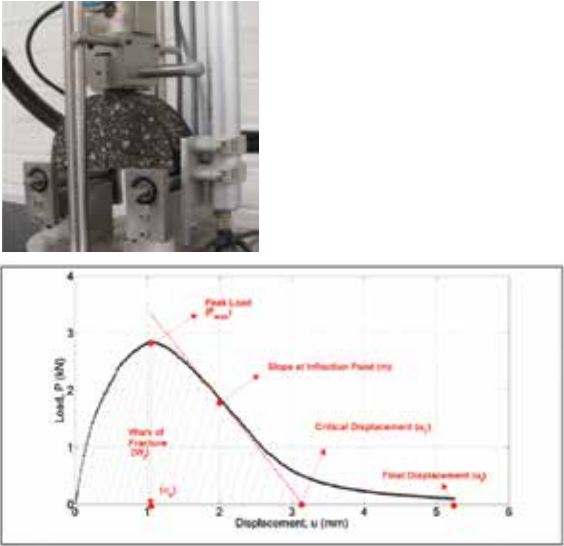


<p>Name of Test Illinois Flexibility Index Test (I-FIT)</p>	<p>Developer(s) Al-Qadi and co-workers University of Illinois at Urbana-Champaign</p>
<p>Test Method(s) AASHTO T 393-21</p>	<p>Adoption by Agencies California, Illinois, New York, Vermont</p>
<p>Description A 150-mm diameter by 50-mm thick semi-circular specimen with a 15-mm notch is simply supported by two bars on the flat surface. The load is applied to the curved surface above the notch at a vertical rate of 50 mm/min. Load and vertical displacement are recorded until the load drops below 0.1 kN. Fracture energy is calculated from the area beneath the load displacement curve to 0.1 kN. The post-peak slope of the load displacement curve is an indicator of the brittle to ductile failure. The flexibility index parameter is calculated by multiplying the fracture energy by a scaling factor constant and dividing by the slope. A minimum of three specimens are used to calculate the average flexibility index.</p>	<p>Photographs/Illustrations</p> 
<p>Test Results Flexibility Index</p>	<p>Test Temperature(s) 25°C</p>
<p>Equipment & Cost Load Frame and Fixture Saw for cutting specimens Saw for notching specimens</p>	<p>\$10,000 to 20,000 \$6,000 \$3,000</p>
<p>Specimen Type and Aging Condition Gyrotory specimen, 3 cuts, 1 notch (2 hours)</p>	<p>Number of Replicate Specimens Not specified</p>
<p>Specimen Conditioning Conditioning for 2 hours at 25°C</p>	<p>Testing Time <1 minute per specimen</p>
<p>Data Analysis Complexity Fair (using Excel Spreadsheet) Simple (using software)</p>	<p>Test Variability Single-Operator Precision: 27.1% COV (AASHTO) Multi-laboratory Precision: 34.1% COV (AASHTO)</p>
<p>Field Validations Good (pavement sections in Illinois and on FHWA ALF)</p>	<p>Overall Practicality for Mix Design and QA Good for Mix Design Fair for QA</p>
<p>Key References</p> <ul style="list-style-type: none"> Al-Qadi, I.L., H. Ozer, J. Lambros, A.E. Khatib, P. Singhvi, T. Khan, J. Rivera-Perez, and B. Doll (2015) Testing Protocols to Ensure Performance of High Asphalt Binder Replacement Mixes using RAP and RAS. ICT Report No. FHWA-ICT-15-017. Illinois Center for Transportation. Al-Qadi, Imad L., D. L. Lippert, S. Wu, H. Ozer, G. Renshaw, I. M. Said, A. F. Espinoza Luque, et al. <i>Utilizing Lab Tests to Predict Asphalt Concrete Overlay Performance</i>. FHWA-ICT-17-020, Urbana, IL: Illinois Center for Transportation, 2017. 	