

HVS Evaluation of Flexible Overlays on Composite Pavements



- The primary goal of the proposed project is to identify and predict the expected life of thin asphalt overlay treatments used for rehabilitating and preserving PCC pavements.
- **Fall 2016 tasks**
- Conduct experiments on HVS and lab testing
- Determine the major factors affecting the performance and service life for a variety of thin asphalt overlay mixes and treatments.

Heavy Vehicle Simulator

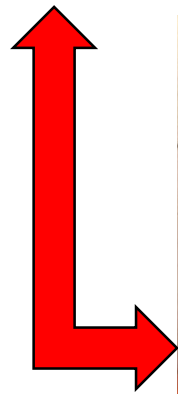
- Simulate large volume of highway vehicle loading in a short time period on flexible, composite, or rigid pavements.
- Wheel load can be varied from 4500 lbs. to 22,500 lbs.
- Multiple tire types can be used, to include truck tires with pressure 80-100 psi and pressure up to 210 psi to simulate C-181 aircraft tires
- Track has the ability to simulate accelerate, deceleration and wander



Fuel Resistant Asphalt (FRA)



Petroleum Products are detrimental for our roads made up of asphalt i.e. soluble in Gasoline; therefore it is proposed to transform the asphalt roads in to Fuel Resistant Asphalt Roads (FRAR). This transformation will bring revolutionary changes in the field of pavement engineering. The idea is to introduce a fuel resistant composite or polymer in to the asphalt in order to prepare a FRA material



Students will gain hands on experience of mixture preparation. They will learn how to develop experimental plan and execute it in laboratory. They will also learn data acquisition and analyses techniques.

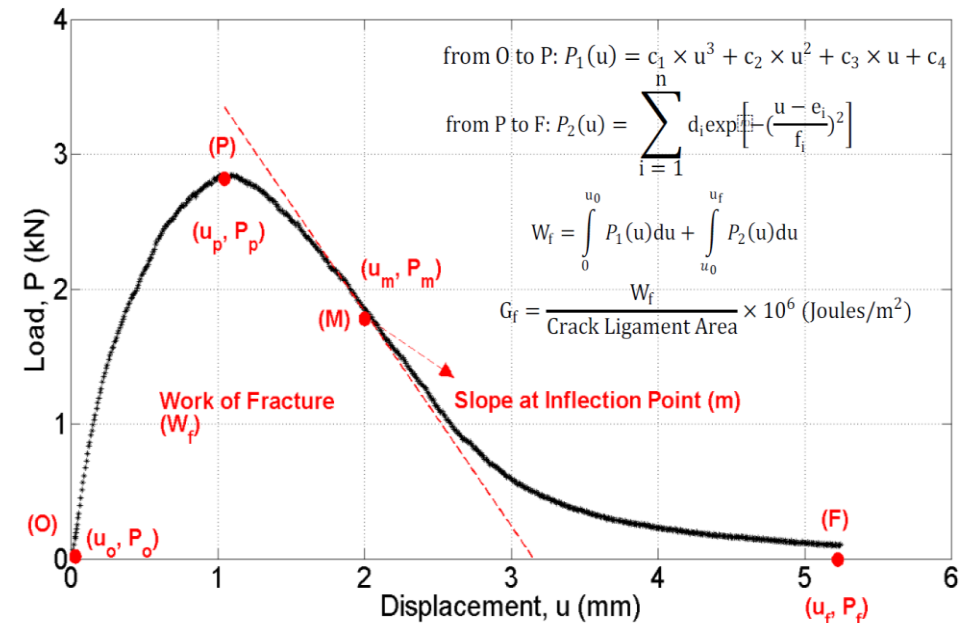
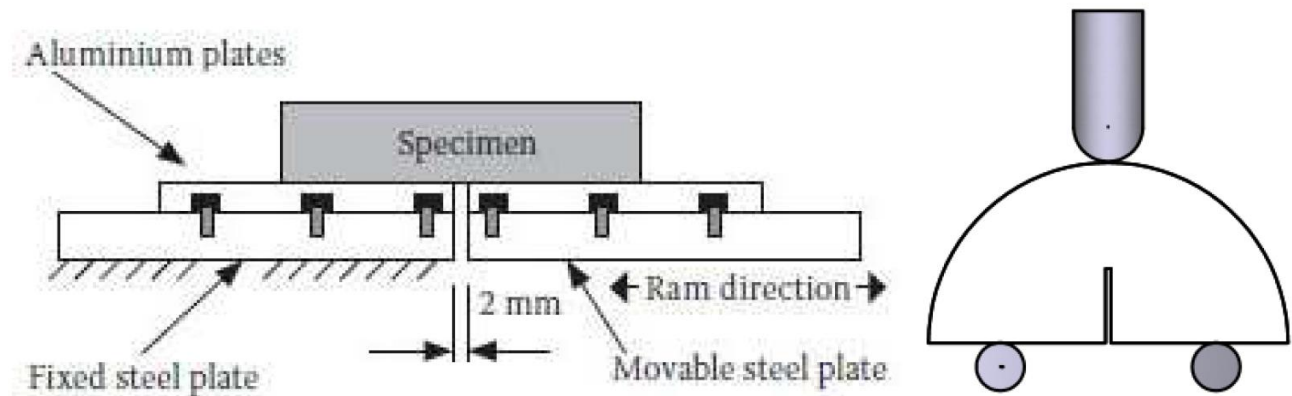


Possible solution of Airport and Parking Pavement Deterioration due to Gasoline Spills

It is proposed to use Asphalt, Aggregates, FRA polymer and Gasoline (87 and 93 Octane) to prepare some samples in the Lab and test them for resistance to High Octane

Evaluation of Semi Circular Beam Test

- Flexible pavements experience various distresses throughout their life. These distresses include permanent deformation (rutting), fatigue cracking, thermal cracking, and reflective cracking.
- Superpave mix design alone is not sufficient to design crack resistant mixes; **therefore, there is a need to identify an appropriate property or parameter that is representative of cracking resistance in the field.**
- **Prepare and execute a laboratory testing plan for evaluating the impact of testing parameters (e.g., testing temperature) on the repeatability of SCB results.**



Engineers Without Borders

- Valle Verde, Dominican Republic
 - Community needs access to Water
 - Assess Alternatives
 - Begin Design

