Florida Department of
TRANSPORTATION

Bituminous Research Update 2018

Wayne Rilko
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Asphalt Contractors Association of Florida
Annual Conference
November 28, 2018

Recently Completed Contracted Research

- Impact of Recycled Asphalt Shingles (RAS) on Asphalt Binder Performance
  - Organization: University of Florida
  - Completion Date: February 2018
- Develop methods to characterize RAS binder.
- Provide guidelines if RAS use is mandated.

Recently Completed Contracted Research

- Evaluation of Reflective Cracking Mitigation Treatments Using the Composite Specimen Interface Cracking (CSIC) Test
  - Organization: University of Florida
  - Completion Date: April 2018
- Evaluate reflective cracking mitigation techniques.
- Find an effective alternative to the asphalt rubber membrane interlayer (ARMI).
- Less expensive than geotextiles.

Active Contracted Research Projects

- High Reclaimed Asphalt Pavement (RAP) Asphalt Mixes for Low Volume Roads
  - Organization: Texas A&M Transportation Institute
  - Completion Date: November 2018
- Create paving mixtures using surplus RAP material.
- Optimize for both cost and performance.
- 60% RAP (hot recycled); 60, 80, and 100% RAP (cold recycled).
- Will allow local agencies to design and construct durable pavements for low volume roads (ADT less than 750 vehicles per day).
- Lower cost as compared to conventional asphalt mixtures.

Active Contracted Research Projects

- Evaluation of FC-5 with High Polymer Binder to Reduce Raveling
  - Organization: Texas A&M Transportation Institute
  - Completion Date: February 2019
- Determine if the use of high polymer binder in FC-5 mixtures (in lieu of PG 76-22 binder) will increase performance/longevity of FC-5 mixtures.

Active Contracted Research Projects

- Determine the Structural Coefficient for Asphalt Mixes Containing High Polymer Binder
  - Organization: University of Nevada Reno
  - Completion Date: March 2019
- Determine the additional structural value of high polymer mixtures compared to asphalt mixtures containing PG 76-22 binder.

Active Contracted Research Projects

- Enhanced Characterization of RAP for Cracking Performance
  - Organization: University of Florida
  - Completion Date: May 2019
- Perform additional tests to characterize RAP for PG 76-22 mixture inclusion.
- More specifically, can we put more RAP in structural courses that contain PG 76-22 binder?
- Can RAP be used effectively in high polymer mixes?

Active Contracted Research Projects

- Evaluation of Roadway Worms/Distortions
  - Organization: Applied Research Associates, Inc.
  - Completion Date: May 2019
- Determine the contributing cause(s) for roadway worms/distortions.
- Identify their impacts on pavement lifespan.
- Develop rehabilitation strategies to prevent these distortions from occurring.

Active Contracted Research Projects

- Study of the Potential Benefits of Anti-Strip Additives on Granite Based FC-5 Asphalt Mixtures
  - Organization: NCAT
  - Completion Date: November 2019
- Determine if additional anti-strip additives will improve the performance/longevity of granite FC-5 mixtures.
- Currently these mixtures contain 1% hydrated lime.
- Determine if adding a liquid anti-strip, additional hydrated lime, or both improves performance.

Active Contracted Research Projects

- Development of a Procedure for Evaluating and Approving Liquid Anti-Strip Agents
  - Organization: Texas A&M Transportation Institute
  - Completion Date: December 2019
- Laboratory evaluation process for determining the effects of liquid antistrip agents on the stability of asphalt mixtures during and after construction.

Upcoming Contracted Research

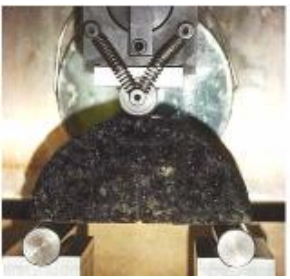
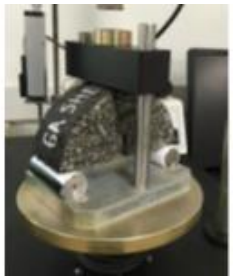
- Development of a Laboratory Test Protocol to Evaluate Alternative Materials for use in Modifying Asphalt Mixtures
- Investigation of Tack Coat Degradation and Effect of Pavement Performance / Investigation of the Impact of Milling and Construction on Bond Strength of Remaining Thin (scab) Layers
- Design and Performance of Open-Graded Friction Course (OGFC) Mixtures Containing Epoxy Asphalt

In-house Research

- FC-5 Durability with the Cantabro Abrasion Loss Test
- Dense Graded Mixture Durability with the Cantabro Abrasion Loss Test
- Fourier Transform Infrared Spectroscopy (FTIR) for Polymer Detection in Asphalt Binders
- Illinois Flexibility Index Test Specimen Variability Study Participation
- National Transportation Product Evaluation Program (NTPEP) Warm Mix Additive Evaluation Lab

Upcoming NCAT Test Track

- Continuation of the group cracking study
- Continuation of the RAP study
- 2018 construction, density study:
  88%, 90%, 92%, and 94% sections




Distributor /Tack/Prime Work Group

- Two meetings thus far.
- Improve communication between contractors, equipment manufacturers and emulsion suppliers.
- Identify needs such as equipment maintenance, product handling and training.
- Calibrations. Measurements. Specification requirements.
- Thanks to contractor and FDOT panel members and manufacturer and supplier representatives.
- Next meeting scheduled for January.

Thank you!

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