NCAT Pavement Test Track

Track Update for VAA Fall Asphalt Conference
• Status of the 2012 research cycle
• Focus on VDOT’s FDR and CCPR sections
• Planning process for 2015 research cycle
Status of 2012 Research Cycle

• >9.8 million ESALs applied (complete ≈10/18)
• Terminal 10M ESAL performance measurements
• Forensic trenching/coring immediately thereafter
• Limitations in “traffic continuation” sections (+)
• Track Conference March 3rd through 5th, 2015.
VDOT Research Background

- 3.66 miles on I-81 in Augusta County, VA in 2011
- Post-mill FDR in right lane due to deterioration
- CCPR base mix placed with 4 inch asphalt overlay
- Need to quantify CCPR structural contribution.
VDOT Track Sections

- 6” HMA on CCPR base on Track foundation (N3)
- 4” HMA on CCPR base on Track foundation (N4)
- 4” HMA on CCPR base on FDR foundation (S12).
Full Depth Reclamation
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Processed Virginia RAP
Onsite CCPR Plant
Roughness and Macrotexture

Equivalent Single Axle Loadings in 2012 Research Cycle

- IRI
- MTD
High-Speed Response

- VA-6" AC N3: ≈40% strain
- VA-4" AC N4: ≈70% strain
- VA-FDR S12: 61.43% strain

Average of Lcor: 256.09, 429.11, 137.06
Standard Deviation of Lcor: 61.43, 123.15, 20.83
Lee Road 159
Lee Road 159
L20 – Thin HMA Overlay on 100% RAP Mix Base
Rutting on Lee Road 159

The graph shows the average rut depth (mm) for various test sections and materials. The materials include Cape, Neat, Base, SBS, Bonded, RAP, RAS, and HiMA. The test sections are labeled from 18 to 25. The graph distinguishes between Inbound and Outbound data with blue and red bars, respectively. The average rut depth for each section is indicated, with a horizontal line at 5 mm for reference.
Subgrade Moisture Contents

Gravimetric Moisture Content (%)

Date of Measurement

- Controls
- Thinlay
- Thinlay with CCPR Base
NCAT’s CCPR Research Efforts

- Mix design methodologies
- Structural contribution (E, M-E)
- QC/QA practices for DOTs
- Training and implementation.
NCAT Expectations for 2015 Track

- Durability of innovative OGFC surfaces
- Surface crack prevention
- 100% RAP foamed CCPR base mix
- Expanded study of thin overlay mixes
- Asphalt based high friction surfaces
- Crack prediction test for ALL mix types (CG)
- Continuation/expansion of preservation (PG15).
Preservation Group (PG15) Study

- Continue monitoring ‘12 sections (Track & 159)
- Capture entire life extending benefit curve(s)
- Partnership with MnROAD for nationwide scope
- Build new sections on higher ADT roadway.
Higher ADT Off-Track Preservation

- US-280 3 miles to east
- 17,000 ADT, >10 years old
- Westbound outside lane
- Tenth mile sections
- Duplicate Lee Road 159
- \( \text{CCPR}_{F,E}, \text{CIR}_{F,E}, \) and HIR
- High BR thin overlays.
2015 Pavement Test Track Conference

March 3-5, 2015
The Hotel at Auburn University and Dixon Conference Center
Auburn, Alabama

- WMA & High RAP/RAS/GTR Mixes
- Optimized Structural Design
- Pavement Preservation
- Implementation

Official registration information will soon be available at www.ncat.us
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