Application of Geosynthetic Paving Fabric Interlayer on I-65

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Outline...I-65 Installation

• Introduction
• Pavement Design Process
• Pavement Treatment options
• Construction Sequence
• Conclusions/ Lessons learned
INDOT Strategic Plan
Indot Core Values
  Respect
  Teamwork
  Accountability
  Innovation
Introduction

- INDOT Experience with paving fabric
- Skeptical about using it in the pavement
- Other states have used it
- Advantages
  - Retard reflective cracking
  - Moisture barrier
  - More life
  - Mill-able
  - Recyclable
Pavement Design Process- Case Study I-65

- MEPDG since 2009
- I-65 from I-465 to I-865
  - 5.85 mile
  - Urban Interstate
  - AADT=55000, 25% Trucks=13534
  - Composite Pavement (5.5” Asphalt over 10” JRCP)
    - Original mainline pavement 1961 JRCP (40’ Joint)
- MCAR Project (short development)
  - Pavement design was given in 2 days including quick field check by Pankaj Patel
  - MOT: Directional close
  - Construction June 16-30 NBL (15 days, removing overlay, patching, new overlay)
  - Construction July 10-22 SBL
I-65 from I-465 to I-865
Pavement Design Process - Case Study

• **Existing pavement condition in 2019**
  • Medium severity and high extent transverse reflective cracking
  • District maintenance performed patching full depth & partial depth (2018-19)

• **Original scope was PM (mill & fill, one lift) and patching**
  • Had used 2014 pavement cores and FWD data
  • 3D Survey (2019) indicated approximately 20% patching
  • Resulted into scope change from PM to 2 lifts overlay
Pavement Design Process- Case Study

• Final Pavement Design Recommendation
  • Mill up to the concrete
  • Full depth PCCP Patching at high distressed concrete areas
  • Overlay with 3.5” HMA Intermediate
  • Interlayer paving fabric on Heavy Tack coat (0.2 gal /Syd PG 64-22)
  • 2” SMA Surface
  • 1 mile of control section without paving fabric
Construction sequence...

- Milling
- Patching
- HMA Intermediate
- Paving fabric interlayer
- SMA Surface
Milling video
Tack coat (PG 64-22)
Tack coat video
Interlayer fabric installation video
SMA Surface
USP for Paving Fabric

- Mill-able
- Recyclable
- Needle-pinched nonwoven
- AASHTO M288
- Tack Coat (PG 64-22)
- Storage
- Equipment
- Construction
- Pay item

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<th>Property</th>
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Conclusions / Lessons learned

• Geosynthetic Paving Fabric Interlayer can be used to retard the reflective cracking and moisture barrier
• Can not completely prevent reflective cracking
• Not a treatment for rocking slabs and faulting
• Increase life of treatment (doubled?? Or few years)
• Tack coat application is imp
• Preoverlay repairs are required
• Less maintenance cycle
Thank you!