Topics

• Briefly Discuss the problems related to Longitudinal Joints
• Discuss Current Specifications and what might be in the Future

Longitudinal Joint Problems

• Bad joints require little or no effort.
• Good joints require diligent knowledge, effort, and pride.
  – Knowledge is abundant
  – Effort lies with the paving crew
  – Pride generally starts with management
• Comes from the top down

Importance of Longitudinal Joints

• Illinois Extended-Life Hot-Mix Asphalt Pavements – Eric Harm
  – “… longitudinal joints would be the portion of the pavement prone to long-term durability problems.”

  TRB Circular No. 503, “Perpetual Bituminous Pavements”
  Go see Asphalt Pavement Alliance Booth

Why the Problem?

– The first pull of the paver generally leaves an area of low density along the unconfined longitudinal edges of the mat.

Challenges in Making a Sound Longitudinal Joint

Permeability, \(10^{-5} \text{ cm/sec}\)
What Are the Current Specifications and What Might Come in the Future?

- Spoke with 10 of the Member States
  - Alabama – Larry Lockett
    - Currently Requires Tacking of Vertical Faces.
    - Tracking Performance of Joints
    - Collecting some Density Data
    - **MAY** Consider Adopting Additional Requirements if Performance Becomes an Issue
  - Florida – Gale Page
    - Currently No Requirements for Longitudinal Joints Other than Staggering the Joints
    - Does Not Foresee Any Specifications in the Future
  - Georgia – Peter Wu
    - Currently Require Tacking the Vertical Face of the Joint
    - For Information Purposes Georgia is Obtaining Joint Densities
    - Does Not Foresee any Future Specification
  - Kentucky – Michael Black
    - Currently Have a Density Requirement for Joints – High Type Pavements
      - Use Cores
    - Joint Density is Tied to Lot Pay Factors
    - Adjustment to Pay Factors Will Happen in Future
  - Louisiana – Chris Abadie
    - Currently No Specifications for Joint Construction
    - May Develop a Specification in the Future

Joint Density Has a Weighting Of 15%
(AC, AV, VMA, Mat Density)

<table>
<thead>
<tr>
<th>Test Result, %</th>
<th>Pay Factor</th>
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<tbody>
<tr>
<td>91.0 – 96.0</td>
<td>1.05</td>
</tr>
<tr>
<td>89.0 – 90.9</td>
<td>1.00</td>
</tr>
<tr>
<td>88.0 – 88.9/96.1 – 96.5</td>
<td>0.95</td>
</tr>
<tr>
<td>87.0 – 87.9/96.6 – 97.0</td>
<td>0.90</td>
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<tr>
<td>&lt; 87.0 or &gt; 97.0</td>
<td>0.75</td>
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### What Are the Current Specifications and What Might Come in the Future?

#### Mississippi – Richard Sheffield
- No Specifications for Joint Construction
- May Consider Tacking Vertical Faces in the Future

#### North Carolina – Wiley Jones
- Currently No Specifications on Joint Construction
- Joints are a Problem
- Collecting Cores at Joints To Evaluate Severity of Problem
- Developing Best Practices Program with Industry

#### South Carolina – Chad Hawkins
- Currently Require Tacking of Vertical Joint
- Starting to Obtain Core Data at Joints

#### Tennessee – Mark Woods
- Require Tacking of Vertical Joints
- Have a Special Provision for Core Density Acceptance on the Joint
- Currently Conducting Research on Best Methods for Constructing Joints
- May have Standard Spec. on Core Acceptance within a Year.

#### Virginia – Bill Bailey
- Have a Memo of Understanding with Industry on Proper Construction of Joints
- Have a Best Practice Manual for Construction of Joints
- Have Been Measuring Joint Density for Several Years, Avg diff. of 2 – 3 % from Mat

### Summary
- Most Common Type Specification is Tacking of Vertical Face – Some require Certain Tack
- Two States Have Density Specifications
  - Kentucky and Texas
  - Tennessee has Special Provision and Working on Standard
- All Require Staggering Joints
- Everyone Indicated Joints Were a Problem
Thanks!

Questions?

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