Burns Cooley Dennis, Inc.

Geotechnical and Materials Engineering Consultants

Longitudinal Joint Density: SEAUPG State Specifications

SEAUPG Annual Meeting
San Antonio, Texas
2007

Allen Cooley

Topics

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

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Longitudinal Joint Problems

Buchanan, 2001 SEAUPG

- 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

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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

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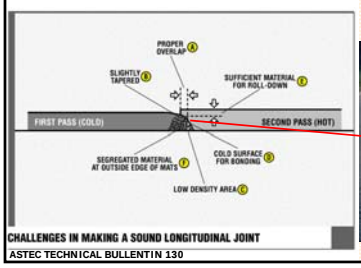
Why the Problem?

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



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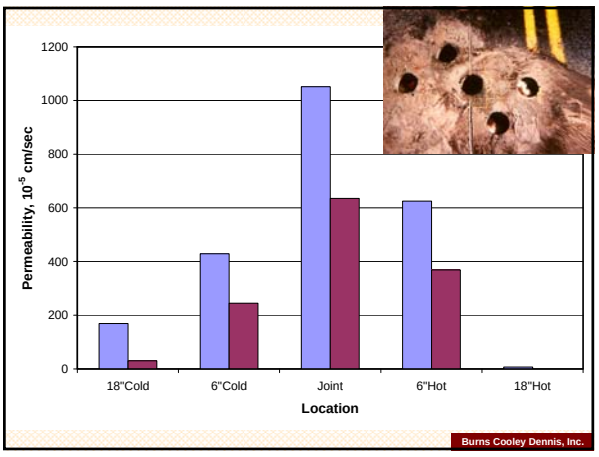

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What Are the Current Specifications and What Might Come in the Future?

- 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

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What Are the Current Specifications and What Might Come in the Future?

- Florida – Gale Page
  - Currently No Requirements for Longitudinal Joints Other than Staggering the Joints
  - Does Not Foresee Any Specifications in the Future

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What Are the Current Specifications and What Might Come 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

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What Are the Current Specifications and What Might Come in the Future?

- 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

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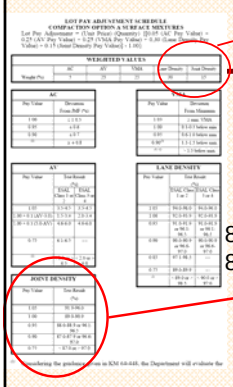

Joint Density Has a Weighting Of 15%
(AC, AV, VMA, Mat Density)

Test Result, %	Pay Factor
91.0 – 96.0	1.05
89.0 – 90.9	1.00
88.0 – 88.9/96.1 – 96.5	0.95
87.0 – 87.9/96.6 – 97.0	0.90
< 87.0 or > 97.0	0.75

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What Are the Current Specifications and What Might Come in the Future?

- Louisiana – Chris Abadie
  - Currently No Specifications for Joint Construction
  - May Develop a Specification in the Future

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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

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What Are the Current Specifications and What Might Come 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

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What Are the Current Specifications and What Might Come in the Future?

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

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What Are the Current Specifications and What Might Come in the Future?

- 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.

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What Are the Current Specifications and What Might Come in the Future?

- 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
  - If Avg. Diff. increases, May Implement Density Specification.

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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

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Thanks!

Questions?

L. Allen Cooley, Jr., Ph.D.

(601) 856-2332
acooley@bcdgeo.com

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