APA Unleashed

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The APA is a partnership of the Asphalt Institute, National Asphalt Pavement Association, and the State Asphalt Pavement Associations. We were formed nearly 10 years ago to promote the increased use of asphalt.
Market Organizational Structure
PEC Task Groups

Best Quality & Competitiveness

Environmental Sustainability

Legislative

Pavement Type Selection

Pavement Design

Pavement Preservation

Private Sector Markets & Local Roads
Back to Basics Series: Binder — Thursday, February 16

Back to Basics Series: Aggregate — Tuesday, March 14

Back to Basics Series: Volumetrics — Tuesday, April 4
MARKET ORGANIZATIONAL STRUCTURE

Research & Technology
- Pavement Economics Committee
  Six Task Groups
- Other Research
  • Asphalt Institute
  • NCAT
- Future Research

Market Research & Communications
- Go-To-Market Task Group

Deployment Activities
- Deployment Task Group
To establish asphalt pavement as the preferred choice for quality, performance and the environment.
Five regional councils focused on what works in the field to the benefit of the asphalt pavement industry locally and nationally.
Criteria:

- 35+ years old
- 13+ years between overlays (average)
- No increase > 4"
This award honors asphalt pavements that were designed and built with outstanding care and exceptional quality. The result is a long-lasting pavement, one that serves the traveling public well, provides true value to the taxpayers, and demonstrates both the convenience and the quality of asphalt pavements.
Regional Initiatives

• **Life Cycle Cost Analysis**

• **Rehab Competition**
  – GOAL: Create competitive industry message promoting best HMA practices.

• **Proper Design Thickness**
  – GOAL: Promote initiatives designed to teach designers how to optimize pavement design while ensuring performance.

• **Commercial Market Strategy**
  – GOAL: Implement tools designed to enhance market share in private sector market.
WARNING!

AMERICA RIDES ON US
Versatility

ver·sa·tile
(vûr′sə-təl, -tîl′) adj.
1. Capable of doing many things competently.
2. Having varied uses or serving many functions:
3. Variable or inconstant; changeable:

A Miracle Product
Placement

- History
  - Pavers
  - Smoothness
  - Transfer Machines
  - Segregation
    - Mix
    - Heat

- Speed of Construction
  - Get out of the Traffic

70% FASTER

Utilizing accelerated techniques, asphalt pavement construction can be up to 70% faster. 

APA
DriveAsphalt.org
Recycle

- History
  - 80’s – Today
  - NAPA Report
    - 25% Just Be Careful
    - Additional Testing
  - Drivability
    - 2.8$ Billion Saved Annually

In 2014, reused asphalt materials, saved taxpayers more than $2.8 billion.

[Image: APA Asphalt Pavement Alliance]
Inspection

• 80’s – Today Quality Initiatives
  – QMA, QC, QMP

• Increased Knowledge
  – Agency
  – Industry

• Performance Testing
Durability & Design

- Durability
  - Density = Life
    - 1% = LCCA savings 8.8%
  - AC Content
  - Understand Rutting

- Optimized Design
Review of Initial Service Life Determination in LCCA Procedures and In Practice – DRAFT

Summary of Middle 90% of Pavement Ages at Time of 1st Rehab

<table>
<thead>
<tr>
<th>Pavement Type</th>
<th>No.</th>
<th>Avg</th>
<th>Min</th>
<th>Max</th>
<th>Std Dev</th>
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</thead>
<tbody>
<tr>
<td>AC</td>
<td>206</td>
<td>17.68</td>
<td>7.09</td>
<td>28.93</td>
<td>5.51</td>
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<tr>
<td>PCC</td>
<td>121</td>
<td>23.84</td>
<td>12.88</td>
<td>35.44</td>
<td>5.79</td>
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</table>

Ride Quality (IRI) Prior to Rehabilitation

<table>
<thead>
<tr>
<th>Pavement Type</th>
<th>Very Good** &lt; 60</th>
<th>Good 61 – 95</th>
<th>Fair 96 – 120</th>
<th>Poor 21 – 170</th>
<th>Very Poor &gt; 170</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC Pavements</td>
<td>9.6%</td>
<td>34.3%</td>
<td>24.1%</td>
<td>17.5%</td>
<td>14.5%</td>
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<tr>
<td>PCC Pavements*</td>
<td>1.1%</td>
<td>23.3%</td>
<td>26.7%</td>
<td>34.4%</td>
<td>14.4%</td>
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</tbody>
</table>
Advancements in Flexible Pavement Design

RECALIBRATION PROCEDURES FOR THE STRUCTURAL ASPHALT LAYER COEFFICIENT IN THE 1993 AASHTO PAVEMENT DESIGN GUIDE

By
Dr. David H. Timm, P.E.
Dr. Mary M. Robbins
Dr. Nam Tran, P.E.
Dr. Carolina Rodezno

November 2014

NCAT Report 14-08

FLEXIBLE PAVEMENT DESIGN — STATE OF THE PRACTICE

By
Dr. David H. Timm, P.E.
Dr. Mary M. Robbins
Dr. Nam Tran, P.E.
Dr. Carolina Rodezno

August 2014

NCAT Report 14-04

REFINED LIMITING STRAIN CRITERIA AND APPROXIMATE RANGES OF MAXIMUM THICKNESSES FOR DESIGNING LONG-LIFE ASPHALT PAVEMENTS

By
Dr. Nam Tran, P.E.
Dr. Mary M. Robbins
Dr. David H. Timm, P.E.
Dr. J. Richard Willis
Dr. Carolina Rodezno

September 2015

NCAT Report 15-05

http://eng.auburn.edu/research/centers/ncat/info-pubs/technical-reports.html
What does Optimized Design mean?

SN Value .52

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<th>Layer</th>
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<tr>
<td>Surface (AC)</td>
<td>2.00''</td>
</tr>
<tr>
<td>Binder/Intermediate</td>
<td>2.00''</td>
</tr>
<tr>
<td>Base (AC)</td>
<td>1.50''</td>
</tr>
<tr>
<td>Aggregate Base</td>
<td>6.00''</td>
</tr>
<tr>
<td>Subbase</td>
<td>7.00''</td>
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SN Value .44

<table>
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<th>Layer</th>
<th>Thickness</th>
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<tr>
<td>Surface (AC)</td>
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<tr>
<td>Binder/Intermediate</td>
<td>2.00''</td>
</tr>
<tr>
<td>Base (AC)</td>
<td>3.00''</td>
</tr>
<tr>
<td>Aggregate Base</td>
<td>6.00''</td>
</tr>
<tr>
<td>Subbase</td>
<td>7.00''</td>
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</tbody>
</table>

20% Savings

5.5'' HMA

7'' HMA
Environment

- Sustainability
- Can’t improve what we do not measure
- LCA
- EPD’s
  - NAPA
  - Industry ready
Environmental Product Declaration for Asphalt Mixtures

Company

Product Description

Environmental Impacts

The life cycle impact assessment results are relative expressions and do not predict actual impacts on category endpoints, the scoring of thresholds, safety margins, or risks.

Impact Assessment Results

Impact Category

Global Climate Change (Global Warming)

Ozone Depletion

Acidification Potential

Eutrophication Potential

Searing Potential

Toxic Water

Interpretation

Declaration of Limitations

Additional Environmental Information

This declaration is an environmental product declaration in accordance with ISO 140252006 Type A environmental performance label which transparently describes the potential environmental impacts of the described product during the identified stages.

This declaration is based on the product's performance and function, and therefore the data presented in the EPD shall not be used for comparability purposes when the asphalt mixture performance and function are not the same. ISO certified laboratories are required to ensure that the performance and function can be compared. EPDs of other products may not be comparable because they could be calculated using a different PCR.

This declaration is a WorldGreen Achievement Sustainability Commendation Recipient. Visit https://www.worldgreen.org/ for the current status.

The secretariat of the EPD Association has not been involved in the preparation of the EPD.

Note

The impact of recycling asphalt shingles was estimated using data for processing recycled asphalt. The source of the shingles (board or factory reject) is not being assessed.
Recap

- Placement
- Recycle
- Inspection
- Durability
- Environment
Thank You

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