Asphalt Institute Update

TRB Committee AFK10
“General Issues in Asphalt Technology”

Philadelphia, PA
April 24-26 2006
Topics Covered Today

- Seminars/publications
- Binder Spec Database
- PG-Plus Testing
- Rubblization for Airfields
AI Seminar/Education Program

• Lexington
  – Mixture (2), binder (2), Bailey method courses (3) this past season

• Airport Pavement Workshops
  – Two annually, in cooperation with FAA
  – Recently completed one in Irving, TX

• NHI courses
  – 131050, “Asphalt Recycling”
  – 131063, “HMA Pavement Evaluation and Rehabilitation

• Miscellaneous
  – Conferences
  – Local seminars, often with state asphalt pavement associations
Publications/software

• Publications
  – IS 220, PPA Modification
  – IS 215/ER 215, PMA Performance
  – New MS-4 (Asphalt Handbook) under development-fall 2007

• Software
  – SW-1, Thickness Design
    • Conversion of DOS pavement design and analysis software to Windows
Binder Specification Database

• Collaboration between PRI Asphalt Technologies and Asphalt Institute
• Summary Document for Each State DOT
  – On AI’s website
  – Kept current
• Standard Format Includes:
  – Test Methods And Criteria
  – Typical Grades
  – Agency Contact
  – Web Address For Full Binder Specs
The Asphalt Institute is a U.S. based association of international petroleum asphalt producers, manufacturers, and affiliated businesses.
State Binder Specs

Description: The Asphalt Institute and PRI Asphalt Technologies have collaborated to develop this binder specification database. Available below (as downloadable pdf files) are individual documents for each of the 50 state highway agencies summarizing their respective asphalt binder specifications. A few additional agencies are also provided. A standardized format is used to list specification methods and criteria, PG-plus tests and requirements, typical grades, exclusions, and the agency's website where specifications can be found.

Updating: AI and PRI will periodically contact the Binder or Materials Engineer listed on each document to review the agency's information for accuracy. Corrections or comments may be e-mailed to us by using the link below. Changes will only be made after confirmation by the individual listed for that agency.

Disclaimer: While care has been taken to provide the most accurate and current information, users are warned that there may be inaccuracies and recent specification revisions may not be reflected. To ensure the most accurate information, the particular agency should be contacted.

Click HERE to fill out the form for corrections or comments.

All documents are in Adobe PDF format. You need the free Adobe Reader to view these files. If you do not have the reader, you can download it by clicking on the Get Adobe Reader button.

Alaska    Arizona    Arkansas
Alaska    California
Alaska    Colorado    Connecticut
Alaska    Colorado    Delaware
Alaska    Colorado    Florida
Alaska    Colorado    Georgia
Alaska    Colorado    Hawaii
Alaska    Colorado    Idaho
Alaska    Colorado    Illinois
Alaska    Colorado    Indiana
Alaska    Colorado    Iowa
Alaska    Colorado    Kansas
Alaska    Colorado    Kentucky
Alaska    Colorado    Louisiana
Alaska    Colorado    Maine
Alaska    Colorado    Maryland
Alaska    Colorado    Massachusetts
Alaska    Colorado    Michigan
Alaska    Colorado    Minnesota
Alaska    Colorado    Mississippi
Alaska    Colorado    Missouri
Alaska    Colorado    Montana
Alaska    Colorado    Nevada
Alaska    Colorado    New Hampshire
Alaska    Colorado    New Jersey
Alaska    Colorado    New Mexico
Alaska    Colorado    New York
Alaska    Colorado    New York State
Alaska    Colorado    North Carolina
Alaska    Colorado    North Dakota
Alaska    Colorado    Ohio
Alaska    Colorado    Oklahoma
Alaska    Colorado    Oregon
Alaska    Colorado    Pennsylvania
Alaska    Colorado    Rhode Island
Alaska    Colorado    South Carolina
Alaska    Colorado    South Dakota
Alaska    Colorado    Tennessee
Alaska    Colorado    Texas
Alaska    Colorado    Utah
Alaska    Colorado    Virginia
Alaska    Colorado    Washington
Alaska    Colorado    Washington
Alaska    Colorado    West Virginia
Alaska    Colorado    Wisconsin
Alaska    Colorado    Wyoming
State: **PENNSYLVANIA**

Materials: Re: Section 409 - Bituminous Materials

Date Last Reviewed: 4-1-2005

Web Address: www.dot.state.pa.us

Materials Engineer: Dean Maurer

Contact Info: demaurer@state.pa.us

### ASPHALT BINDER:

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>PMA’s</th>
<th>Exclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>409</td>
<td>PA DOT only recognizes one standard grade of PG 76-22. It is in fact required to be neat asphalt binder modified with SB or SBS polymers only. Consistent with previous point, Acid, Oxidation, and any other modifiers are not permitted (with the exception of anti-strip agents).</td>
<td>None stated.</td>
<td>Acid, Air Blown.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>Test Method AASHTO or Other</th>
<th>Requirements by Performance Grade, PG (Common Grades)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>58-28</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>15.6°C</td>
<td>ASTM D 70</td>
</tr>
<tr>
<td>Flash Point, °C</td>
<td>T 48</td>
<td></td>
</tr>
<tr>
<td>Rotational Viscosity, Pa Xs</td>
<td>135°C</td>
<td>T 316</td>
</tr>
<tr>
<td>Dynamic Shear, kPa G*/ sin δ, 10 rad./sec.)</td>
<td>At grade temperature</td>
<td>T 315</td>
</tr>
</tbody>
</table>

**RTFOT RESIDUE:**

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>Test Method</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T 240</td>
<td>1.0</td>
</tr>
</tbody>
</table>
### RTFOT Residue:

<table>
<thead>
<tr>
<th>Property</th>
<th>Method</th>
<th>Temperature</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass Loss, %</td>
<td>T 240</td>
<td>1.0 max.</td>
<td></td>
</tr>
<tr>
<td>Dynamic Shear, kPa G° / sin δ, 10 rad./sec.</td>
<td>T 315</td>
<td>2.2 min.</td>
<td></td>
</tr>
<tr>
<td>PAV Residue:</td>
<td>R 28</td>
<td>100°C; 20 hrs; 300 psi</td>
<td></td>
</tr>
<tr>
<td>Dynamic Shear, kPa G°° • sin δ, 10 rad./sec.</td>
<td>T 315</td>
<td>5,000 max.</td>
<td>19°C 25°C 31°C</td>
</tr>
<tr>
<td>Creep Stiffness</td>
<td>T 313</td>
<td>Stiffness 300 max. MPa &amp; m Value 0.300 min.</td>
<td>-18°C -12°C</td>
</tr>
<tr>
<td>Direct Tension, (1mm/min.), % Strain</td>
<td>T 314</td>
<td>No Requirement</td>
<td></td>
</tr>
</tbody>
</table>

### PG Plus Requirements: YES – See Description

### Original:

<table>
<thead>
<tr>
<th>Property</th>
<th>Method</th>
<th>Temperature</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separation, Softening Point Difference, 48 hours, °C</td>
<td>163°C</td>
<td>ASTM D 5892</td>
<td>2.2 max.</td>
</tr>
</tbody>
</table>

### RTFOT Residue:

<table>
<thead>
<tr>
<th>Property</th>
<th>Method</th>
<th>Temperature</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elastic Recovery, 10 cm, %</td>
<td>25°C</td>
<td>ASTM D 113</td>
<td>60 min.</td>
</tr>
</tbody>
</table>

### Notes:
See Bulletin 25

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Disclaimer: "To ensure the most accurate and current information, the specific agency should be contacted."
State DOT’s Specifying PG-Plus to Ensure Presence of Polymer
Multiple Stress Creep Recovery

Relief for Proliferation of Specs?

- AI Lab Currently Evaluating for FHWA
- Uses DSR and Is Very Quick and Easy
- Potentially Replace Empirical PG-Plus Tests
- Approach: Develop AASHTO/ASTM Standard Practice
- Decision: Part of PG System, or PG-Plus?
Development of Guidelines for Airfield Rubblization

Airfield Asphalt Pavement Technology Program (AAPTP) Project 04-01
• Technology developed for highways
• Predominate PCC rehab technique 1990’s
• From 1994 - 2004, > 50 million sq meters rubblized
• Most thicknesses between 20-30cm (8-12in)

But What About on Airfields?
Rubblization Issues Addressed in AAPTP 04-01

- Selecting candidate projects?
  - ASR infected PCC?
- “Best” method (RB or MHB) for given PCC thickness and subgrade conditions
- Material characterization for thickness design?
- Commercial airports vs GA airfields?
  - PCC very thick
  - PCC very thin on weak subgrade
- Drainage of wide features?
- Test pits and other QC methods/ criteria?
- Proof rolling and other construction items?
APA Announces Winners of 2005 Perpetual Pavement Awards

The Asphalt Pavement Alliance (APA) has announced the winners of its 2005 Perpetual Pavement Awards. The award is given to owners of asphalt pavements that are at least 35 years old and have never had a structural failure. The road must demonstrate the qualities expected from long-life asphalt pavements: excellence in design, quality in construction, and value to the traveling public. [Full Story]

Third Caribbean Asphalt Conference, Sept. 17 - 21

The Third Caribbean Asphalt Conference will be held in Trinidad, West Indies, on September 17 - 21, 2006. The Caribbean Asphalt Association was established during the 2005 conference to promote the use of asphalt, emulsions and other related products and to develop the association as the pre-eminent center for asphalt technology and standards in the Caribbean region. For more information, contact caribbeanasphaltcommittee@yahoo.com.