“Durable Asphalt Pavements”
- Webinar Series
What Exactly is Asphalt Durability?

RAMON BONAQUIST
Advanced Asphalt Technologies, LLC

Asphalt mixture durability is defined as the ability of compacted asphalt concrete to maintain its structural integrity throughout its expected service life when exposed to the damaging effects of the environment and traffic loading (1). Asphalt mixture durability is one of several factors affecting pavement durability, which is defined as the ability of a pavement to retain a satisfactory level of performance over its expected service life without major maintenance (1). To be durable, a flexible pavement must be

1. Structurally adequate. The pavement layers must be sufficiently thick to carry the intended traffic loading and protect the supporting subgrade soil.
2. Properly drained. This includes adequate cross slope to drain water from the surface of the pavement as well as adequate slide slopes, ditches, or inlets to move water away from the pavement and minimize water infiltration into the pavement structure.
3. Properly constructed. Good construction practices must be used for all pavement layers. This includes proper grading and compaction of the subgrade, proper thickness and compaction control for all layers, and proper bond between asphalt layers. For surface layers, minimizing segregation and proper joint construction are important aspects of quality construction needed for a durable flexible pavement.
4. Built with durable materials. The materials used in the pavement must be able to withstand the effects of aging, traffic, and the environment. Base and subbase materials should not be susceptible to moisture or frost. Asphalt concrete surfaces must resist the effects of aging and moisture, as well as the forces applied by traffic and environmental loading.
What Are the Main Asphalt Pavement Related Distresses?

- Moisture Damage
- Permanent Deformation
- Fatigue Cracking
- Thermal Cracking
- Reflection Cracking
- Top-down Cracking
Achieving Durable Asphalt Pavements is CRITICAL!
Did You Know…..

- **Each day**, approximately 1.4 Million tons of HMA are produced in the U.S. (M-F production basis)
- Equivalent to ~2,500 lane miles @ 12’ wide and 1.5” thick
- Distance from New York to Las Vegas
What Goes Into Achieving Durable Asphalt Pavements?

- Achieving the desired asphalt mixture durability requires more than just a “good” mix design.
- Total picture concept (pre-construction to preservation) is needed to help ensure performance.
- Good performance results from leading practices being followed by all parties involved in the process.
How Can I Learn More About These Leading Practices?

• AAPT’s 2019 Fall Webinar Series (4 part) has been designed is to provide the attendee with a holistic understanding of the various factors that can impact the durability of an asphalt pavement from the selection of materials and pre-construction decisions to preservation of the pavement after it has been built and opened to traffic.

• Subject matter experts will share knowledge and experiences related to asphalt pavement durability.

https://asphalttechnology.org/2019-webinar-series/
<table>
<thead>
<tr>
<th>Webinar</th>
<th>Date</th>
<th>Time / Duration</th>
<th>Presenter</th>
</tr>
</thead>
</table>
| Materials               | October 31<sup>st</sup> | 11 AM CDT, 60 to 75 minutes | Brian Prowell, Advanced Materials Services LLC  
Bob McGennis, HollyFrontier Refining & Marketing LLC |
| Design                  | November 7<sup>th</sup> | 11 AM CDT, 60 to 75 minutes | Richard Willis, National Asphalt Pavement Association  
Don Christensen, Advanced Asphalt Technologies LLC |
| Production and Construction | November 14<sup>th</sup> | 11 AM CDT, 75 to 90 minutes | Erv Dukatz, Mathy Construction  
Becky McDaniel, North Central Superpave Center – Purdue Univ.  
Tim Aschenbrener, Federal Highway Administration |
| Preservation            | November 21<sup>st</sup> | 11 AM CDT, 60 to 75 minutes | Judith Corley-Lay, National Center for Pavement Preservation  
Greg Harder, Asphalt Institute |

Let’s Get Started!

• Webinar series represents a wealth of knowledge from subject matter experts.
• Encourage everyone to join each webinar.
• Identify something that can be done in your area to help improve asphalt pavement durability.
• Use these webinars as part of your local training.
• Remember...good ideas travel and do not come with zip codes!