

**2022 PAPA Regional Technical
Committee Meeting
March 15, 16, and 17**

**Wade Collins
President
Pavement Technology Inc.**

Balanced Mix Design-Rutting Parameters that Affect Results

- **Test Temperature (50C) is the Most Important Factor when running the AASHTO T324-19-Hamburg Wheel Tracking Test. Be sure temperature stays within +/- 1C**
- **Loading Rate (158lbs) Should always be within +/- 1lb**
- **Loading Rate Speed (52+/-2 passes minute)**
- **Sample Preparation**
 - **Be sure the samples are cut and “butted” together correctly in the molds. Gap between molds should not exceed 1/4”**
 - **Recommend grouping together samples with voids as close to the same as possible**
 - **Precondition samples at test temperature(50C) for 45 minutes. Samples should not be submerged for more than 60 minutes including conditioning time prior to starting a test**
 - **Avoid allowing the wheels to sit on the samples for extended periods of time before starting a test**

How can Rutting Test Be Used in Conjunction with Balanced Mix Designs?

- **Test your Mix Designs, Plant Produced Mixes, and Final In-Place Compacted Mixes**
- **Build a database on the performance of all mixes and make comparisons and correlations between the performance of Laboratory Plant, and Field.**
- **Can be used to understand what (aggregate, binder, recycle, additives, etc.) drives performance in your mixes. Basically find the optimum combination that performs the best and costs the least amount of money for each individual project.**
- **Forensic Testing of New and Existing Pavements**
 - **New Mixes that are exhibiting early failures**
 - **Older Mixes-Determine Performance of Underlying layers and Utilize this information to help with a rehabilitation strategy**

ASPHALT PAVEMENT ANALYZER-JUNIOR (APA JR)



Hamburg-Type Cylindrical Samples (Testing Complete)



Design Modifications to Address Rutting

- Adjusting aggregate gradation (better interlock)
- Using a stiffer asphalt binder
- Polymer modification
- Lowering asphalt content
- Increasing recycled materials content
- Adding fiber additives

Design Modifications to Address Stripping

- Changing binder source
- Changing aggregate type
- Adding an anti-strip agent

Additional Performance Tests-APA Junior

- Rutting(AASHTO T340-10)
- FAA/P401
 - Hose Pressure 250psi
 - Load 250lbs
 - Temperature 64C
 - 4000 Cycles
 - Failure Criteria 10mm
- Micro surfacing/Slurry Seal Testing
- Friction Testing
- Purwheel Testing(Solid Rubber/Pneumatic Wheels)

Chamber View of APA Jr Rut Testing



