NEW AND SPECIALTY MATERIALS

2018 VDOT/VAA Asphalt Seminar

CO Materials, Sungho Kim
Overview

- Sub-Division Mixes
- Cold Central Plant Recycling Mix (CCPRM)
- THMACO (Thin Hot Mix Asphalt Concrete Overlay)
- High Polymer (HP) Binder
- Asphalt Mastic Crack Sealing
Sub-Division Mixes

- To have a better performance mix for Subdivisions
- Subdivision Mix Subcommittee: VDOT/VAA
- Trial Sections (Richmond)
  - Control: SM 9.0A (65 gyration)
  - TS 1: SM 9.0A (50 gyration)
  - TS 2: SM 9.0A with Natural Sand (20%)
  - TS 3: SM 9.0A with Forta-Fi fiber
Sub-Division Mixes

- Other Options
  - SM 9.0 (50 gyration): VMA 17%
  - SM 4.75
CCPRM

- SP315: Cold Central Plant Recycling Material
- Spec & Testing Requirement still evolving
- Testing is not Easy and Usual
- Discuss and Have a Plan between Contractor & VDOT at Pre-Construction or Pre-Paving Meeting
SP Thin Hot Mix Asphalt Concrete Overlay
- Acceptance Testing: Gradation, AC
- 1 year Warranty

Asphalt Binder for Mix: PG 64V-28

Tack Coat
- Option 1: Spray-bar paver (also called Nova Chip)
- Option 2: Hot Applied Tack with regular paver
THMACO

- Tack for Option 1: Not in Stock at Binder Terminal
- Need to be tested properly ahead
- Pay Attention & Sampling from Field as Needed
High Polymer (HP) Binder

- SS211, Type E(HP) Asphalt Mixture
- Polymer Content: about 7.5%
- PG 76E-28 (HP): Recovery 90% @ 76°C, Viscosity
  - Recovery ≡ Performance / Viscosity ≡ Workability
- Recommended Storage Temperature: 320~330°F
- Storage Life: about a week (from 90% recovery)
- Mix Placement Temperature: above 300°F
High Polymer (HP) Binder

- Higher Temp Storage will expedite curing
  - Not having well spread Polymers
  - Workability issue: pumping, mixing, placing

- Sampling for Approval and Monitoring
  - Supplier needs to send a sample to CO Asphalt Lab (Project based approval)
  - Field (Plant) samples by VDOT

- New HP Binder Coming: Double the storage life
Asphalt Mastic Crack Sealing

- SP315 Issued
- Hot Applied Polymer Modified Asphalt Mastic
- Mainly for Sealing Cracks Wider than 1 in
  - Possible for a small skin patching before overlaid
- Don’t Overuse for Patching