

Corrected Optimum Asphalt Content (COAC)



A Brief History

- Early concerns that lead to the implementation of COAC in SC:
 - Dry mix designs
 - Early pavement failures
- SC Asphalt Mix Design History
 - Marshall
 - Years: 1940's - 1993
 - Continued with Marshall for all roads except Interstate
 - Interstate Only: 1993-1999 – 19.0 & 12.5 mm
 - Performance Testing: None
 - Superpave
 - Years: 1995 – 2020
 - Performance Testing: APA 1998
- COAC – SCDOT felt that our virgin mix designs were too low on neat AC
 - Years: 2020
 - Performance Testing: APA & Ideal CT

SCDOT's Performance

- Evolution of COAC
 - SCDOT adopted ratio: 75-25 – Based on discussions within the SCDOT & Contractors QIC Meetings
 - Objective: To improve durability of asphalt mixtures and reduce cracking concerns with recycled designs.
- Advantages
 - Thicker Binder Film Thickness– Less Prone to Stripping
 - Improved In Place Density – Easier to Work
 - Tighter / Improved Longitudinal Joints
 - Overall Goal - More Durability!
- Disadvantages
 - Initial cost \$ with (+ 0.2 - 0.5) more PG 64-22 or 76-22
 - If too high could cause bleeding – Establish lower limits on AV / VFA.