ASTM C595 and C1157

Recent Changes

NCC Fall Meeting 2009
ASTM C1157- Standard Performance Specification for Hydraulic Cements

- NO restrictions on composition
- Provides for most latitude/flexibility in attaining performance w/o prescription
- Not readily referenced or accepted by DOTs
- Permitted in several other specifications
ASTM C1157- Standard Performance Specification for Hydraulic Cements

- True Performance Specification:
  - GU, HE, MS, HS, MH, LH and Optional R
  - Strengths comparable to C150 and C595
  - Early Strength less restricted for MS, HS, LH
Performance and Soundness:
- Soundness (Autoclave, Internal Sulfate) same limits as ASTM C150
- Set Time
- Heat of Hydration same as ASTM C150
- Sulfate Resistance and ASR Mitigation
ASTM C595- Standard Specification for Blended Hydraulic Cements

- 2 Major revisions in the past 8 years
- Nomenclature Changes
- 2005
  - I-S (25-70), I-SM (<25), S (>70), I-P (25-40), I-PM (<15), P (25-40 no early strength limits)
- 2007
  - I-S and I-P with defined (%)
- 2009
  - Binary and Ternary Cements (I-S/I-P and I-T)
Nomenclature provides more information to the user...Ternary Blended Cement with 20% slag cement and 15% Pozzolan is known as a I-T (S20) (P15)
ASTM C595- Standard Specification for Blended Hydraulic Cements

- Same Performance criteria based on %’ages
  - Early Strength-Lesser restricted for MH, LH, HS
  - Soundness (Autoclave and Internal Sulfate) same as C150 cements
  - Heat of Hydration same as C150
  - ASR Resistance and Sulfate Resistance table limits
ASTM C595-Standard Specification for Blended Hydraulic Cements

- This specification provides for better utilization of materials, prediction of performance
- Provides for Transparency for the User with respect to material composition