



MISL

Material Solutions Laboratory

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USE OF 3RD PARTY QA TESTING: I-55 LESSONS LEARNED

Wight



MSL PROFILE

- IDOT DBE certified, AMRL/CCRL accredited Professional Civil Engineering Firm pre-qualified in QA Complete and located in Elk Grove Village, IL
- Provides complete Field and Laboratory QA Materials Testing for Aggregates, Portland Cement Concrete, Hot Mix Asphalt and Soils



MSL TESTING PROCESS



- Communication
 - Field Inspector, MSL Lab Manager, Wight & Company Material Coordinator, Contractor's QC
- AB Correction Factors were verified throughout production
- Mix temperatures were closely monitored during testing

MSL TESTING PROCESS

- Dedicated equipment to run all PFP and QCP Samples
- MSL dedicated one lab tech to run all PFP and QCP samples
- HMA Thermometers calibrated and spot checked weekly
- Verified Internal Angle



MSL PROJECT MANAGER

- MSL Project Manager
 - Verified PFP calculations
 - Reviewed all test results
 - Tracked trends in QC/QA test results
 - Reported all test results to IDOT, Wight & Company Material Coordinator, and K-Five QC
 - Performed random audits of MSL's lab technician and procedures to ensure compliance



I-55 SPECIAL CONSIDERATIONS

- 158,000 Tons of PFP SMA
 - 477 Challenge Buckets
 - 838 Challenge Cores
- 55,000 Tons of QCP HMA
 - 165 Mix Buckets



MSL HISTORY OF PHASE III PFP TESTING

I-55 – 60I64 (2011)

ALLIED ASPHALT

- Approximately 59,900 Tons of PFP SMA Binder Placed
 - 60 mix samples
 - 327 core samples
- No samples were challenged
- Composite Pay Factor = 98%
- Approximately 60,000 Tons of PFP SMA Surface Placed
 - 60 mix samples
 - 355 core samples
- 5 mix samples challenged
- Composite Pay Factor = 99.4%

MSL HISTORY OF PHASE III PFP TESTING

I-80 – 60M63-60M66 (2011)

D CONSTRUCTION

- Approximately 57,100 Tons of PFP SMA Binder Placed
 - No samples were challenged
 - Composite Pay Factor = 98.5%
 - 1st PFP SMA Project with RAS
 - 5 Core Samples Challenged for entire project
- Approximately 58,700 Tons of PFP SMA Surface Placed
 - No samples were challenged
 - Composite Pay Factor = 99.3%

MSL HISTORY OF PHASE III PFP TESTING

I-190 – 60T33 (2013)

ALLIED ASPHALT

- Approximately 8,000 Tons of SMA Binder Placed
 - 10 mix samples
 - 43 core samples
- No samples were challenged
- Composite Pay Factor = 99.8%
- Approximately 8,900 Tons of SMA Surface Placed
 - 9 mix samples
 - 45 core samples
- No samples were challenged
- Composite Pay Factor = 97.8%

MSL HISTORY OF PHASE III PFP TESTING

- Over 380,000 Total Tons of SMA Placed Since 2011
 - 272 mix samples tested
 - 1,445 core samples tested
- Average Composite Pay Factor of 99.7%
- Only 10 Mix/Core Samples Were Challenged by Contractor



3RD PARTY TESTING GOING FORWARD

- Consistency Is Key
 - QC/QA Lab/Field Technicians, Lab Equipment, HMA Plant Operations, HMA Paving Operations
- When IDOT Identifies the Need
 - High-Volume Projects
 - Nighttime Paving
 - In Conjunction With Phase III Construction Engineering Consultants
 - Help with District Capacity Issues
- Not Recommended for all PFP/QCP Projects
- AMRL - Accreditation Program
 - *Quality Assurance (QA) by the Engineer. The Department's laboratories which conduct PFP testing will participate in the AASHTO re:source's (formerly AMRL) Proficiency Sample Program.*
- Pay Factor Success
 - Good Design (VMA Designed High, Dust/AC Designed Low, Didn't Max ABR)