

# **PWL**

# **Michigan DOT's**

# **Experience**

**Pavement Construction Engineer**

**Curtis J. Bleech**

**NCAUPG January, 2007**



# History

- Prior to using PWL MDOT used a QC/QA Specification that incorporated contractor test results for pay
- Contractor test results were verified by MDOT for acceptance
- FHWA allows for the use of contractor test results for pay provided they are verified by the state transportation agency

# Move to PWL

- In 2002-2003 there was a need for a new acceptance specification for HMA
- FHWA had concerns with the existing acceptance specification
- A joint MDOT, FHWA and industry committee was formed and development of MDOT's initial PWL Specification began

# 2004 PWL Specification

- 600 ton Test Strip requirement for each mix type on a project
- MDOT perform all QA tests
- Referee testing allowed for VMA & air voids based on independent random QC test results
- Automatic retest for rejectable quality limits
- Air voids, VMA & in place density used for determining PWL

# 2004 PWL Specification

- Contractor shut down until results of test strip determined
- If an overall pay factor (PF) of 100% then contractor allowed to move into full production
- If  $< 100\%$  PF, second test strip
- If second test strip  $< 100\%$  PF, third test strip req'd.
- If third test strip  $< 100\%$  PF it is removed and replaced with another test strip
- 4<sup>th</sup> and subsequent test strips repeated until a test strip passes with 100% PF

# 2004 Pilot Projects

- 8 projects selected; 1 project in each of our 7 Regions with one having two projects
- Data committee reviewed data from the 8 projects
- PWL Committee reconvened and changes made to the 2004 PWL specification

# 2005 PWL Specification

- 750 ton Test Strips
- MDOT perform all QA tests
- Referee testing allowed for VMA & air voids based on independent random QC test results
- Automatic retest for rejectable quality limits
- Air voids, VMA & in place density used for determining PWL

# 2005 PWL Specification

- Contractor shut down until results of test strip determined
- If an overall pay factor (PF) of 99.5% then contractor allowed to move into full production
- If  $< 99.5\%$  PF, second test strip
- If second test strip  $< 99.5\%$  PF, third test strip req'd.
- If third test strip  $< 99.5\%$  PF it is removed and replaced with another test strip
- 4<sup>th</sup> and subsequent test strips repeated until a test strip passes with 99.5% PF



# 2005 Pilot Projects

- 22 projects selected; attempted to get 1 project in each of our Transportation Service Centers (TSC's)
- Pilot projects reviewed
- PWL Committee reconvened and changes made to the 2006 PWL specification

# 2006 PWL Specification

- 750 ton Test Strips
- MDOT perform all QA tests
- Referee testing allowed for VMA & air voids based on independent random QC test results
- Automatic retest for rejectable quality limits
- Air voids, VMA & in place density used for determining PWL
- A 2% incentive added

# 2006 PWL Specification

- Contractor shut down until results of test strip determined
- If an overall pay factor (PF) of 99.5% then contractor allowed to move into full production
- If  $< 99.5\%$  PF, second test strip
- If second test strip  $< 99.5\%$  PF, third test strip req'd.
- If third test strip  $< 99.5\%$  PF it is removed and replaced with another test strip
- 4<sup>th</sup> and subsequent test strips repeated until a test strip passes with 99.5% PF

# 2006 Projects

- Full implementation on all Superpave projects
- Project data being gathered by the PWL Data Committee

# 2007 PWL Specification

- 800-1000 ton Initial Production Lots (IPL)
- MDOT perform all QA tests
- Dispute Resolution Testing allowed for VMA, air voids & in place density based on independent random QC test results
- Air voids, VMA & in place density used for determining PWL
- 2% incentive available
- Conditional approval by FHWA for full implementation

# 2007 PWL Specification

- Contractor allowed to pave up to 3 initial production lots on 3 separate days of 800-1000 tons each
- After the 3<sup>rd</sup> IPL, production is suspended unless the requirements of moving into full production are met
- Requirements for moving into full production are that VMA, Air Voids & Density must each be equal to or greater than 80.00 PWL
- If after the 3<sup>rd</sup> IPL the contractor has not met the requirements the 4<sup>th</sup> IPL will be reduced to 750 tons
- If the requirements are not met on the 4<sup>th</sup> IPL it will be removed and repeated until the requirements are met

# 2008 PWL Specification

- FHWA conditional approval requirements will need to be met
- 2006 project data will be analyzed
- Revisions may be required

# Questions for DOT's

- Allowance of Dispute Resolution or Referee Testing & on what parameters?
- Test Strips Onsite/Offsite?
- Controls for mix properties during production; i.e. master spec, fines to affective, etc.?



Thank You