Bituminous PWT
(Percent Within Tolerance)

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Quality

- PWT is a continuation of the Department's goal of increased quality.
- Joint effort between the Department, FHWA and Industry
- 2016 was "A year to learn"
- Future of PWT

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Current Status

- **Two (2) methods in use:**

1. **PWT-LTS (Laboratory Testing Section)**
   - Acceptance at LTS
   - Gmm Verification included on Federally Funded and NHS Projects

2. **PWT-HOLA (Hands On Local Acceptance)**
   - Department Acceptance, Contractor Lab
   - Department Option to Witness Only
   - Gmm Verification included on Federally Funded and NHS Projects.(Conducted at Local Lab)

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2016 PWT Summary

158 PWT Projects Let in 2016

District	Total Active Project	SSP included in Advertisement		SSP Used on Project	
		LTS	HOLA	LTS	HOLA
1-0	9	9	0	6	3
2-0	3	2	1	2	1
3-0	8	7	1	7	1
4-0	3	3	0	3	0
5-0	5	5	0	5	0
6-0	1	1	0	0	1
8-0	25	23	1	24	1
9-0	12	5	7	6	6
10-0	6	5	1	4	2
11-0	7	6	1	2	5
12-0	7	7	0	7	0
Total	**86**	73	12	**66**	**20**

Industry Breakdown of Active Projects		
Prime Contractors (ea.)	Suppliers (Plants) (ea.)	Paving Contractors (ea.)
32	**57**	**31**

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2016 PWT Summary
(As of January 12, 2017)

		Overall Lot Payment Averages			Pay Factor Averages			
	Lots	Average Lot Payment	Average Lot Payment (Cores)	Average Lot Payment (Other)	Asphalt Content	#200 Sieve	Primary Control Sieve	Density (Cores/Optimum Rolling/Non-Movement)
Total	452	1.01	1.02	1.01	101.27	101.12	100.25	101.60
PWT-HOLA	121	1.02	1.02	1.01	102.26	101.98	101.03	101.68
PWT-LTS	331	1.01	1.01	1.00	100.89	100.80	99.95	101.58

	Average Density Pay Factor (Cores Only)					
	Total		HOLA		LTS	
	Lots	Pay Factor	Lots	Pay Factor	Lots	Pay Factor
Total	355	102.03	88	102.26	267	101.96
BPN 1	2	103.00	0	N/A	2	103.00
BPN 2	139	101.82	38	100.82	101	101.92
BPN 3	168	102.21	34	103.24	134	101.95
BPN 4	46	102.60	16	103.61	30	102.06

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2016 PWT Summary
(As of January 12, 2017)

	PWT	Sec. 409	PWT-HOLA	PWT-LTS
Bonus Pay Lots	336	N/A	101	235
100% Pay Lots	30	420	8	22
Reduced Pay Lots	80	21	12	68
Defective Lots	6	11	0	6
Terminated Lots	0	N/A	0	0
Total	452		121	331

District	Incentives	Reductions	Δ
1	$163,333.05	-$55,637.69	$107,695.36
2	$46,908.89	-$18,866.20	$28,042.69
3	$66,837.57	-$18,450.16	$48,387.41
4	$128,419.13	$0.00	$128,419.13
5	$88,680.57	-$20,140.30	$68,540.27
6	$18,811.25	-$4,546.88	$14,264.37
8	$214,244.95	-$250,969.58	-$36,724.63
9	$159,038.61	-$45,848.47	$113,190.14
10	$156,313.92	-$4,871.88	$151,442.04
11	$148,884.75	-$20,736.51	$128,148.24
12	$121,392.28	-$28,014.25	$93,378.03
Total	$1,312,864.97	-$468,081.92	$844,783.05

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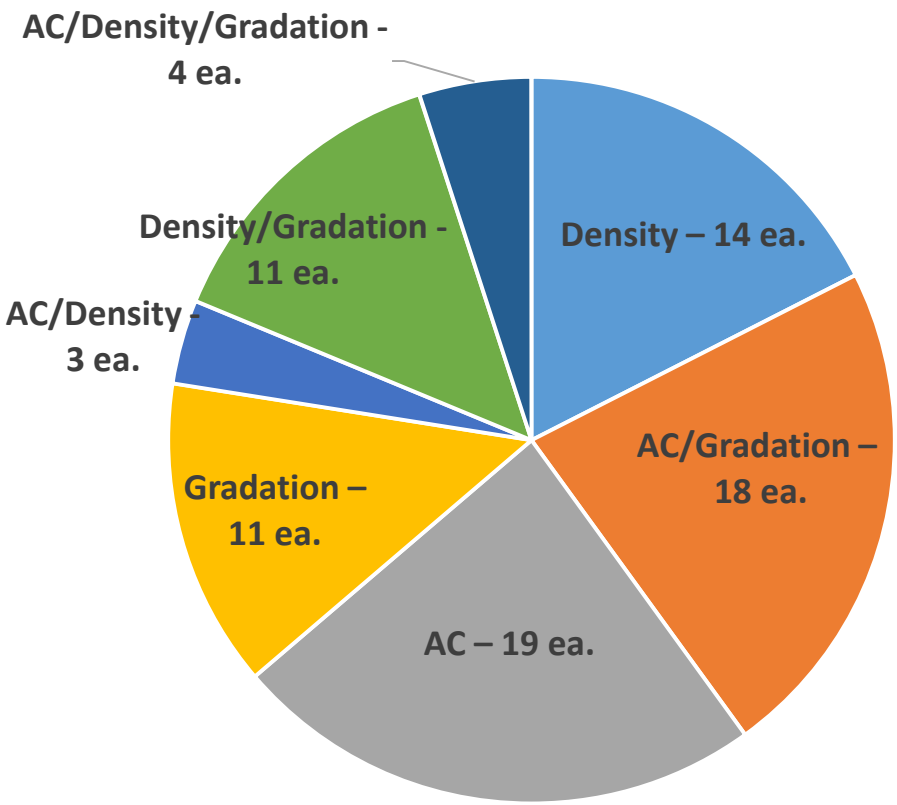
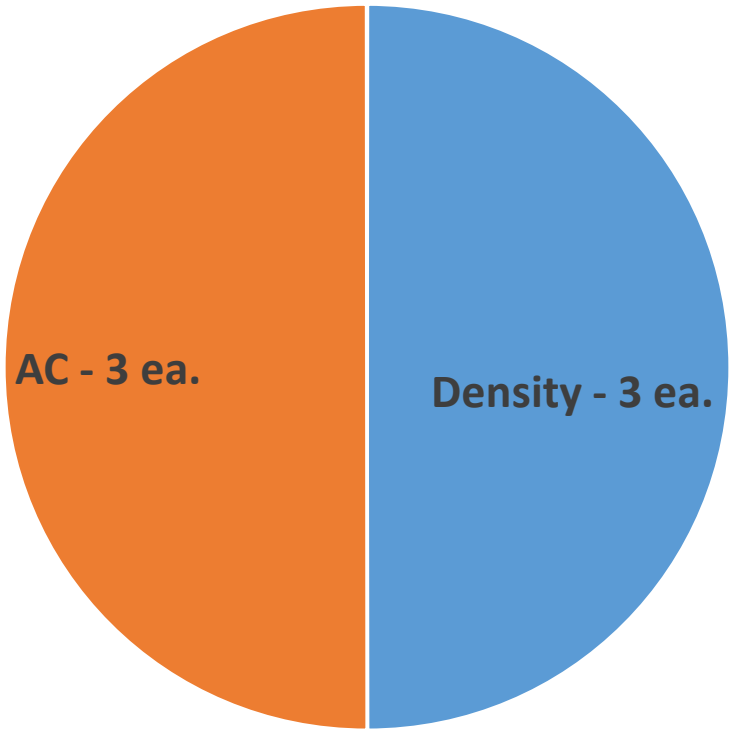
2016 PWT Summary
(As of January 12, 2017)

80 Reduced Pay Lots



6 Defective Lots



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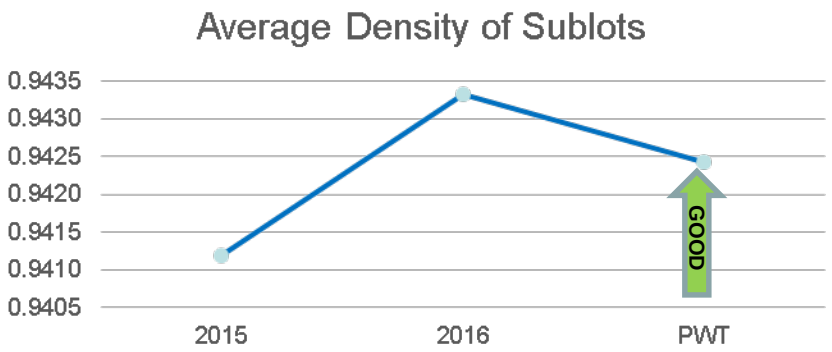
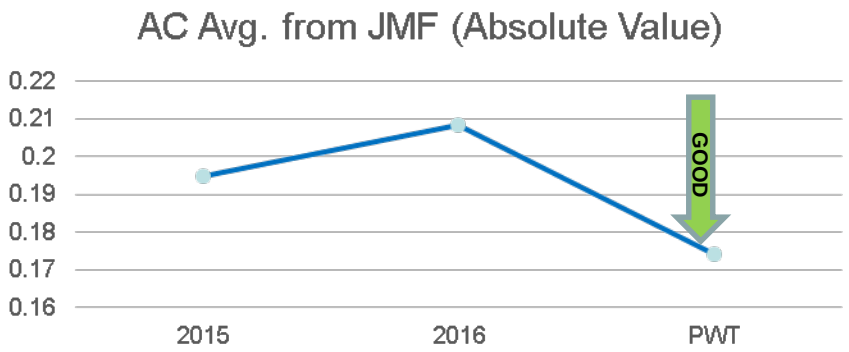
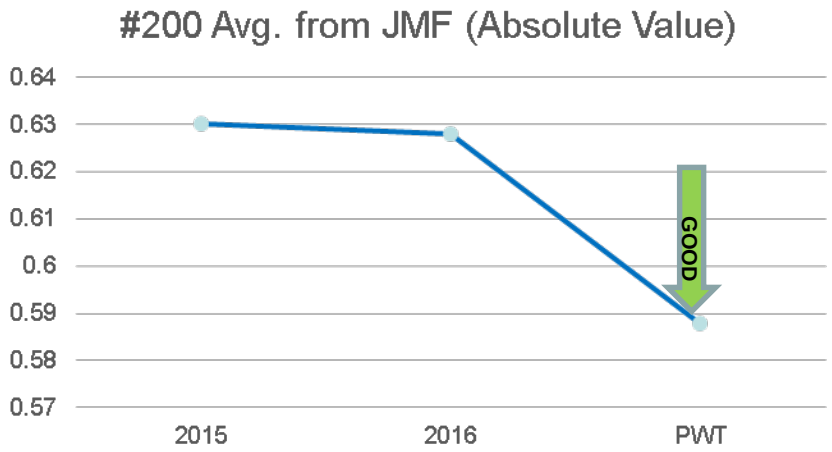
2016 PWT Summary

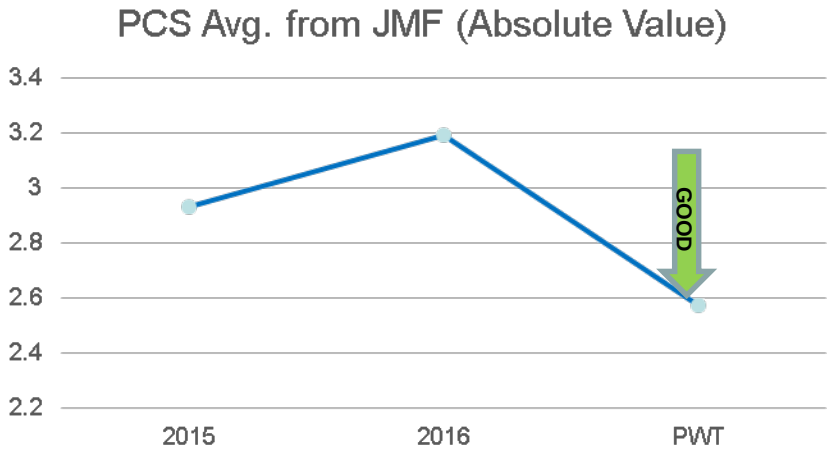
(Data from January 1, 2015 – November 23, 2016)

(Sublot Acceptance Test Results for 9.5mm, 12.5mm, 19mm & 25mm Mixes, excludes SMA)









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2016 PWT Summary

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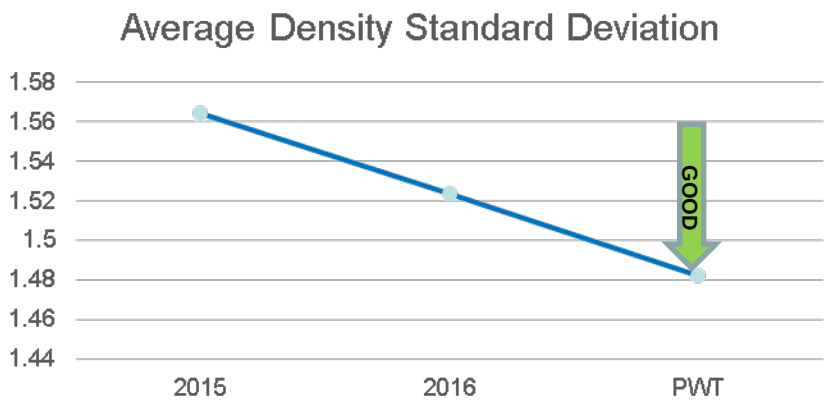
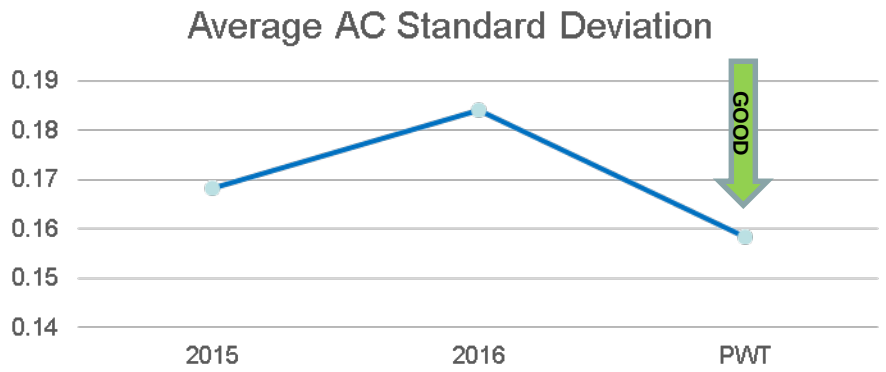
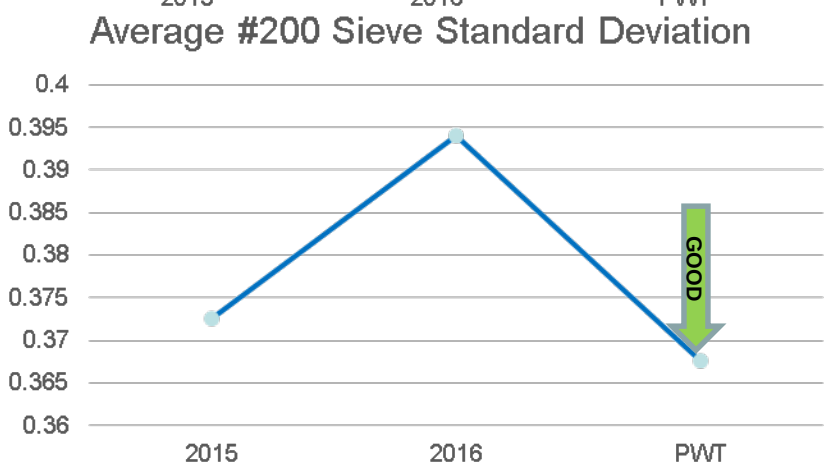
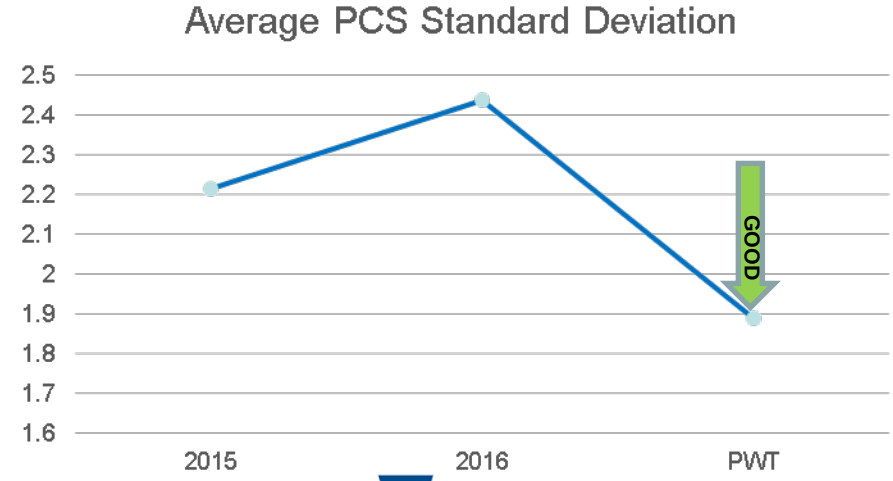
(Lot Acceptance Test Results for 9.5mm, 12.5mm, 19mm & 25mm Mixes, excludes SMA)









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2016 After Action Review

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Tim Ramirez, P.E. – PennDOT	Gary Hoffman, P.E. – PAPA
Neal Fannin, P.E. – PennDOT	Jeff Frantz – Glasgow, Inc.
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Adam Ostinowsky, E.I.T. – Urban	John Basile – Lindy Paving, Inc.
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With additional input from:

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Sherry Hartman (PennDOT)

PAPA Technical Committee

Thank You !

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2016 After Action Review
Lessons Learned: Sustain and/or Improve

→→→What should we sustain that we are doing right?

- **Standard Special Provisions**
- **Use Guidelines**
- **eCAMMS**

→→→What should we improve that we can do better?

- **Standard Special Provisions**
- **Use Guidelines**
- **eCAMMS**

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2016 After Action Review
Lessons Learned: Sustain

- Standard Special Provisions
  - No Changes to Upper and Lower Spec. Limits
  - No Changes to Payment Formula
  - Retain DISTRICT Option to Witness Only on PWT-HOLA (100% State / Non-NHS)

- Use Guidelines
  - Retain Contractor Request to Re-evaluate Non-RPS Items in Accordance with Section 409 ($PF_D < 100$)

- eCAMMS
  - Bonus and Reduced Pay Lots reported as “P”

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2016 After Action Review
Lessons Learned: Improve

- Standard Special Provisions
  - Updating AMRL to re:source
  - Clarifying Laboratory Assessment Period (24 months from Assessment Date)
  - PWT to PWL (not anticipated for 2017)

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2016 After Action Review
Lessons Learned: Improve

- Use Guidelines
  - Appropriate use of Density Acceptance by Cores (ref. Section 409)
  - Contract Item for Bonus/Reductions (PDA)

- eCAMMS
  - Multiple Ignition Oven Calibration Factors (PWT-HOLA)

2017 Construction Season

- PWT on **ALL** **Applicable** Paving Projects
- Revised SSPs
- Revised Use Guidelines
- Field Users Guide
- Continued monitoring of all PWT Projects
- 2017 AAR

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Key Points of PWT

- Where can be PWT be applied?
- Terminated Lots (Contractor Elected)
- Sample Setup
- Contract Adjustments

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Where can PWT be applied?

- Applicable to all bituminous paving items of Sections 309, 311, 316, 409, 410, and 411
- NOT applicable to:
  - Stone Matrix Asphalt (SMA)
  - Crumb Rubber Modified Asphalt Binder
  - Gap-Graded Asphalt Rubber Mixtures,
  - FJ-1 Wearing Courses
  - Asphalt Warranty Pavements
  - Shoulders falling under Section 650 Items

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Contractor Terminated Lots

- Allows contractor to limit risk when early QC results indicate an issue
- Must stop paving
- 90% maximum pay
- Must R&R if defective by test results

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Sample Setup

TR-447 Ref #: A123456 **Lab #:** L123456 **Status:** Finalized **Pass/Fail:** P **English**

Contract #:	E123456	**Sample Class:**	AS - Acceptance	**QA Rating:**	
Fed Proj Stat Code:	100%PA	**JMF Year-No:**	2017-123	**Collected:**	07/01/2016
WBS #:	P-30017107M02-0450-701-2	**TR-447 XRef:**	A123457	**Set Up:**	07/01/2016
PO #:		**# Increments:**	5	**Received Dock:**	07/02/2016
County Code:	1	**Lot / Batch #:**	1	**Received Lab:**	07/02/2016
S.R.:	123	**Tank No.:**		**Last Test Date:**	07/03/2016
Section:	000	**Lot Size & UoM:**	2500 tons	**Released:**	07/03/2016
Organization:		**PE/PEQ No:**		**Orig. Rpt. Date:**	
Construction Item #:	0411-0001	**Location Code:**			
408 Year/Ver/Sect:	2011 / 9 / **409APWT**	**Place Collected:**			
Sp. Provision:		**Plastic Air (217):**			
Mtl Code / Class:	97 (Bituminous Ignition Furnace) - WR 9.5				
Product Name:					
Sampled By / Cert ID #:	Bob Builder	**Inspected By / Cert ID #:**			

Identify use of PWT

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Contract Adjustments

- Adjustments entered into ECMS
- “PWT-LTS” or “PWT-HOLA” Adjustment Types
- Attach eCAMMS Report
- Contract Item for Bonus/Reductions (PDA)
  - ✓ Included in Revised Use Guidelines (Coming Soon)

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Contractor's Lab Assessment

- Local acceptance lab will need on-site proficiency assessment by AASHTO re:source (formerly AMRL)
- Every 2 years (from assessment date)
- Assessment on the equipment to be used for acceptance

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Lab Assessments Conducted by District

District #	Number of Assessments Conducted
District 1	2
District 2	1
District 3	1
District 4	0
District 5	1
District 6	3
District 8	2
District 9	5
District 10	1
District 11	2
District 12	0
Total	**18**

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Tests That Must Be Performed / Assessed

- **Either** PTM 702 (*Extraction of Bitumen)* and PTM 739 (*Sieve Analysis of Extracted Aggregate*) **or** PTM 757 (*Asphalt Content by Ignition)* and AASHTO T 30 (*Mechanical Analysis of Extracted Aggregate*)

- PTM 715 (Gmb)

- PTM 716 (Gmb, *Mixtures that Absorb more than 3% Water by Volume*)

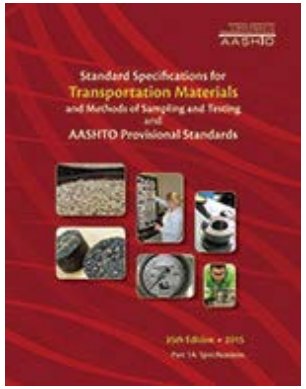
- PTM T209m (*Gmm)*

- AASHTO R 47 (*Reducing Samples*)

COMMON ASSESSMENT FINDINGS

Common Assessment Findings (General)

- Standards: Current AASHTO Standards not available.

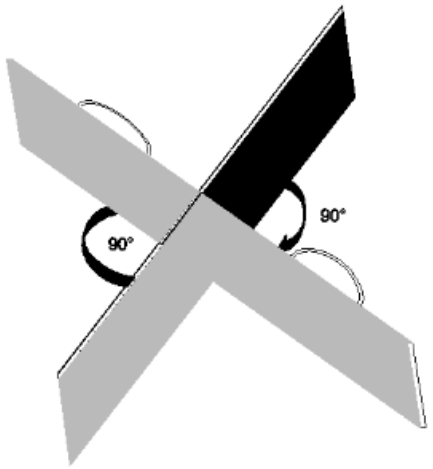


- Ovens: Not enough ovens for the different temperature requirements.

Common Assessment Findings (Testing)

AASHTO R47 (Reducing Samples)

- Quartering Template with Method B



AASHTO T 30 (Mechanical Anaylsis of HMA)

- Wetting Agent
- Rainhart Mechanical Shaker
- Records

Common Assessment Findings (Testing)

PTM 715 (Bulk Specific Gravity)

- Volumeter Water

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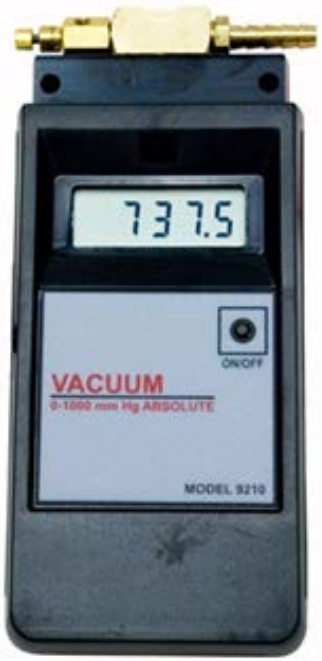
Common Assessment Findings (Testing)

PTM 716 (Bulk Specific Gravity - Coated Specimens)

- Specimens not coated well.
  - Wax too hot.
  - Not refrigerated prior to coating.
- Specific gravity of paraffin
- Trouble with calculations.

Common Assessment Findings (Testing)



PTM T209m (Maximum Specific Gravity)

- Residual Pressure Not Maintained
  - 27.5 ± 2.5 mm Hg (3.7 ± 0.3 kPa)
- Not Able to Maintain a Partial Vacuum
- Records
  - Standardized Every 12 Months

Common Assessment Findings (Testing)

PTM T209m (Maximum Specific Gravity(continued))

- Hose Opening Not Covered
- Thermometer Not Calibrated

THE ASSESSMENT PROCESS

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Scheduling the Assessment
(Online)

AASHTO re:source: www.aashtoresource.org

- "Request Services"
- "Register Your Laboratory With AASHTO re:source"
- "Request a Laboratory Assessment"
- ½ to 1 Day onsite Assessment

The Assessment

- Testing Equipment conformance to Specifications

- Technician(s) properly performing RequiredTests
  - Pennsylvania Test Methods (PTM)
  - AASHTO

- Calibration and Verification Records
  - Balances
  - Thermometers
  - Mechanical Shakers
  - Vacuum gauges

After the Assessment

- Report Issued
- Each Nonconformity Resolved
- Summary Report provided to DME/DMM

Questions?

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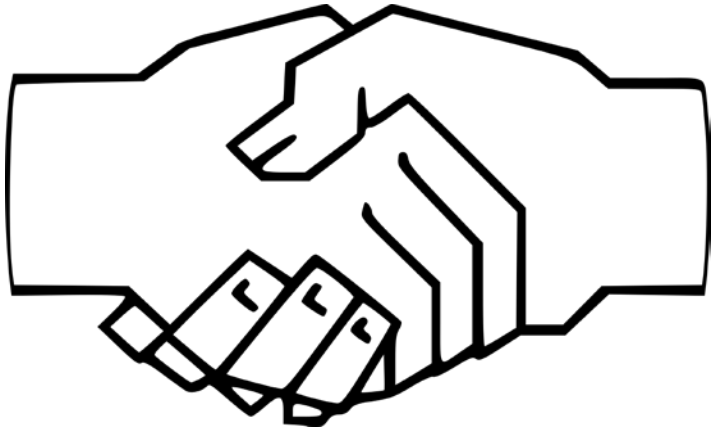

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