



AASHTO Materials Reference Laboratory

Individual Enrollment Rating Sheet
 Hot Mix Asphalt Ignition Oven 17/18
 Final Report Date: 2/11/2009

PSP Enrollment #3879
 University of Arkansas, Fayetteville, AR US

Submitted by sgwill@uark.edu on 12/19/2008 at 1:10 PM
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The Z-Score indicates the number of standard deviations from the average value. The Z-Score is determined by the following calculation:

$$\text{Z-Score} = (\text{Laboratory Test Result} - \text{Average Value}) / (\text{Standard Deviation})$$

The laboratory Rating calculation is based on the absolute value of the Z-Score (or number of standard deviations from the average). The following describes the laboratory Rating system:

- | If Z-Score <= 1 Then Rating = 5
- | If Z-Score > 1 And <= 1.5 Then Rating = 4
- | If Z-Score > 1.5 And <= 2 Then Rating = 3
- | If Z-Score > 2 And <= 2.5 Then Rating = 2
- | If Z-Score > 2.5 And <= 3 Then Rating = 1
- | If Z-Score > 3 Then Rating = 0

A negative sign on a Z-Score or Rating indicates that the laboratory's result was below the average, while a positive Z-Score or Rating indicates that the laboratory's result was above the average.

Asphalt Content by Ignition Method

Initial (as received) Mass of AMRL Pre-Mixed HMA Sample (nearest 0.1g) (for information only) (HMI) (g)

[View Youden Diagram](#) | [View Performance Chart](#)

		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
1	712	1651.3	1650.53	**	**	**	1648.8	1649.14	**	**	**	**	**	**

Asphalt Content by Ignition Method

Correction Factor for Asphalt Binder Content (for information only) (HMI) (percent)

[View Youden Diagram](#) | [View Performance Chart](#)

		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
2	716	0.32	0.227	**	**	**	0.32	0.227	**	**	**	**	**	**

Asphalt Content by Ignition Method

Corrected Asphalt Binder Content (nearest 0.01 percent) (HMI) (percent)

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		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
3	713	4.60	4.583	0.106	0.16	5	4.00	4.049	0.111	-0.45	-5	0.065	-0.72	-5

Mechanical Analysis of HMA (HMI)

Mass Removed by Washing Over the 75- μ m (No. 200) Sieve (nearest 0.1g) (HMI) (g)[View Youden Diagram](#) | [View Performance Chart](#)

		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
4	705	118	94.28	**	**	**	90.6	73.85	**	**	**	**	**	**

Mechanical Analysis of HMA (HMI)

Total Material Passing the 12.5-mm (1/2 in.) Sieve (nearest 0.1 percent) (HMI) (percent)

[View Youden Diagram](#) | [View Performance Chart](#)

		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
5	709	93.4	93.17	0.43	0.53	5	89.9	89.23	0.48	1.38	4	0.37	0.82	5

Mechanical Analysis of HMA (HMI)

Total Material Passing the 9.5-mm (3/8 in.) Sieve (nearest 0.1 percent) (HMI) (percent)

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		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
6	709	86.6	86.22	0.33	1.15	4	77.7	77.94	0.45	-0.54	-5	0.33	-1.32	-4

Mechanical Analysis of HMA (HMI)

Total Material Passing the 4.75-mm (No. 4) Sieve (nearest 0.1 percent) (HMI) (percent)

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		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
7	709	74.4	74.31	0.13	0.71	5	58.5	58.40	0.17	0.58	5	0.12	0.04	5

Mechanical Analysis of HMA (HMI)

Total Material Passing the 2.36-mm (No. 8) Sieve (nearest 0.1 percent) (HMI) (percent)

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		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
8	709	62.1	61.99	0.40	0.27	5	34.4	33.78	0.76	0.81	5	0.47	0.76	5

Mechanical Analysis of HMA (HMI)

Total Material Passing the 1.18-mm (No. 16) Sieve (nearest 0.1 percent) (HMI) (percent)

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		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
9	709	39.5	40.03	0.67	-0.78	-5	20.7	20.97	0.46	-0.58	-5	0.44	0.42	5

Mechanical Analysis of HMA (HMI)

Total Material Passing the 600-µm (No. 30) Sieve (nearest 0.1 percent) (HMI) (percent)

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		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
10	709	23.6	23.80	0.67	-0.30	-5	13.3	13.39	0.47	-0.19	-5	0.41	0.18	5

Mechanical Analysis of HMA (HMI)

Total Material Passing the 300- μ m (No. 50) Sieve (nearest 0.1 percent) (HMI) (percent)[View Youden Diagram](#) | [View Performance Chart](#)

		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
11	708	14.2	14.10	0.59	0.18	5	9.0	9.04	0.50	-0.09	-5	0.32	-0.32	-5

Mechanical Analysis of HMA (HMI)

Total Material Passing the 150- μ m (No. 100) Sieve (nearest 0.1 percent) (HMI) (percent)[View Youden Diagram](#) | [View Performance Chart](#)

		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
12	709	9.7	9.29	0.59	0.69	5	7.0	6.87	0.52	0.25	5	0.32	-0.61	-5

Mechanical Analysis of HMA (HMI)

Total Material Passing the 75- μ m (No. 200) Sieve (nearest 0.01 percent) (HMI) (HMS) (AGF) (percent)[View Youden Diagram](#) | [View Performance Chart](#)

		Sample 17					Sample 18					Repeatability(within-lab)		
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
13	709	7.89	7.501	0.518	0.75	5	6.06	5.817	0.515	0.47	5	0.305	-0.34	-5

** Ratings Suppressed -- No Data Submitted or Data Out of Accepted Range

** Suppressed Items:

Asphalt Content by Ignition Method (Initial (as received) Mass of AMRL Pre-Mixed HMA Sample (nearest 0.1g) (for information only) (HMI)) - The submitted results were for informational purposes only.

Asphalt Content by Ignition Method (Correction Factor for Asphalt Binder Content (for information only) (HMI)) - The submitted results were for informational purposes only.

Mechanical Analysis of HMA (HMI) (Mass Removed by Washing Over the 75- μ m (No. 200) Sieve (nearest 0.1g) (HMI)) - The submitted results were for informational purposes only.