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Final Report Date: 3/26/2014

PSP Enrollment #3879University of Arkansas
Fayetteville, Arkansas USA

Submitted by sgwill@uark.edu on 2/17/2014 at 3:26 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.

Material Finer Than 75-µm (No. 200) Sieve

Total Oven Dry Mass of Specimen Before Washing (0.1 g) - T11/C117[View Youden Diagram](#) | [View Performance Chart](#)

Sample 183							Sample 184					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	1674	510.5	510.14	**	**	**	443.9	456.29	**	**	**	**	**	**

Material Finer Than 75-µm (No. 200) Sieve

Percentage Finer than the 75-µm sieve by washing (0.01 percent) - T11/C117[View Youden Diagram](#) | [View Performance Chart](#)

Sample 183							Sample 184					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	1673	0.49	0.510	0.104	-0.19	-5	0.70	0.866	0.127	-1.31	-4	0.063	-1.64	-3

Sieve Analysis of Aggregates

Total Material Passing the 4.75-mm (No. 4) Sieve (0.1 percent) - T27/C136[View Youden Diagram](#) | [View Performance Chart](#)

Sample 183							Sample 184					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	1682	99.5	99.61	**	**	**	99.7	99.28	**	**	**	**	**	**

Sieve Analysis of Aggregates

Total Material Passing the 2.36-mm (No. 8) Sieve (0.1 percent) - T27/C136[View Youden Diagram](#) | [View Performance Chart](#)

Sample 183							Sample 184					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	1682	84.4	84.88	0.32	-1.49	-4	82.9	82.73	0.77	0.22	5	0.50	0.92	5

Sieve Analysis of Aggregates

Total Material Passing the 1.18-mm (No. 16) Sieve (0.1 percent) - T27/C136[View Youden Diagram](#) | [View Performance Chart](#)

Sample 183							Sample 184					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	1682	62.1	62.74	0.58	-1.11	-4	60.6	60.54	0.78	0.07	5	0.47	1.06	4

Sieve Analysis of Aggregates

Total Material Passing the 600-µm (No. 30) Sieve (0.1 percent) - T27/C136[View Youden Diagram](#) | [View Performance Chart](#)

Sample 183							Sample 184					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	1682	33.3	33.98	0.84	-0.81	-5	32.5	32.91	0.84	-0.50	-5	0.29	0.65	5

Sieve Analysis of Aggregates

Total Material Passing the 300-µm (No. 50) Sieve (0.1 percent) - T27/C136[View Youden Diagram](#) | [View Performance Chart](#)

Sample 183							Sample 184					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	1682	10.8	11.33	0.38	-1.40	-4	10.1	10.56	0.38	-1.22	-4	0.15	0.33	5

Sieve Analysis of Aggregates

Total Material Passing the 150-µm (No. 100) Sieve (0.1 percent) - T27/C136[View Youden Diagram](#) | [View Performance Chart](#)

Sample 183							Sample 184					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	1682	2.1	2.34	0.17	-1.38	-4	2.0	2.43	0.16	-2.71	-1	0.10	-1.37	-4

Sieve Analysis of Aggregates

Total Material Passing the 75-µm (No. 200) Sieve (0.01 percent) - T27/C136[View Youden Diagram](#) | [View Performance Chart](#)

Sample 183							Sample 184					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	1681	0.61	0.616	0.102	-0.06	-5	0.81	1.000	0.106	-1.79	-3	0.074	-1.76	-3

Fine Aggregate Specific Gravity and Absorption

Bulk Specific Gravity [or Relative Density, Oven Dry for C128] - T84/C128[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
10	1530	2.610	2.6061	0.0130	0.30	5	2.611	2.6059	0.0127	0.40	5	0.0068	0.13	5

Fine Aggregate Specific Gravity and Absorption

Bulk Specific Gravity, SSD [or Relative Density, SSD for C128] - T84/C128[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
11	1531	2.627	2.6233	0.0101	0.37	5	2.627	2.6232	0.0097	0.39	5	0.0057	0.01	5

Fine Aggregate Specific Gravity and Absorption

Apparent Specific Gravity [or Apparent Relative Density for C128] - T84/C128[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
12	1529	2.654	2.6511	0.0089	0.33	5	2.653	2.6516	0.0090	0.15	5	0.0051	-0.21	-5

Fine Aggregate Specific Gravity and Absorption

Absorption (0.01 percent) - T84/C128[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
13	1527	0.62	0.643	0.153	-0.15	-5	0.60	0.654	0.155	-0.35	-5	0.073	-0.30	-5

Sand Equivalent Test

Sand Equivalent Value (whole number) (whole number) - T176/D2419[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
14	882	--	93.6	2.7	--	--	--	93.2	2.7	--	--	--	--	--

Sulfate Soundness of Aggregates

Material Finer Than the 1.18-mm Sieve, Na (0.01 percent) - T104/C88[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
15	336	--	1.866	1.286	--	--	--	1.780	1.216	--	--	--	--	--

Sulfate Soundness of Aggregates

Material Finer Than the 600-µm Sieve, Na (0.01 percent) - T104/C88[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
16	336	--	1.032	0.668	--	--	--	1.006	0.668	--	--	--	--	--

Sulfate Soundness of Aggregates

Material Finer Than the 300-µm Sieve, Na (0.01 percent) - T104/C88[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
17	334	--	0.953	0.674	--	--	--	0.931	0.664	--	--	--	--	--

Sulfate Soundness of Aggregates

Material Finer Than the 1.18-mm Sieve, Mg (0.01 percent) - T104/C88[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
18	146	--	7.725	6.475	--	--	--	7.562	6.219	--	--	--	--	--

Sulfate Soundness of Aggregates

Material Finer Than the 600-µm Sieve, Mg (0.01 percent) - T104/C88[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
19	146	--	3.929	2.605	--	--	--	3.713	2.466	--	--	--	--	--

Sulfate Soundness of Aggregates

Material Finer Than the 300-µm Sieve, Mg (0.01 percent) - T104/C88[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
20	146	--	2.651	1.720	--	--	--	2.515	1.562	--	--	--	--	--

Uncompacted Void Content of Fine Aggregate

Uncompacted Voids, Test Run # 1 (0.01 percent) - T304/C1252[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
21	642	44.43	44.835	**	**	**	44.49	44.741	**	**	**	**	**	**

Uncompacted Void Content of Fine Aggregate

Uncompacted Voids, Test Run # 2 (0.01 percent) - T304/C1252[View Youden Diagram](#) | [View Performance Chart](#)

	Total	Sample 183					Sample 184					Repeatability(within-lab)		
		Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab

	Labs													Rating
22	642	44.47	44.823	**	**	**	44.57	44.738	**	**	**	**	**	**

Uncompacted Void Content of Fine Aggregate

Uncompacted Voids, Average of Two Runs (0.01 percent) - T304/C1252[View Youden Diagram](#) | [View Performance Chart](#)

Sample 183							Sample 184				Repeatability(within-lab)			
	Total Labs	Lab Data	Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
23	642	44.45	44.835	0.550	-0.70	-5	44.53	44.751	0.563	-0.39	-5	0.274	0.42	5

** Ratings Suppressed

-- No Data Submitted or Data Out of Accepted Range

**** Suppressed Items:****Material Finer Than 75- μ m (No. 200) Sieve** (*Total Oven Dry Mass of Specimen Before Washing*) - For informational purposes only.**Sieve Analysis of Aggregates** (*Total Material Passing the 4.75-mm (No. 4) Sieve*) - For informational purposes only.**Uncompacted Void Content of Fine Aggregate** (*Uncompacted Voids, Test Run # 1*) - For informational purposes only.**Uncompacted Void Content of Fine Aggregate** (*Uncompacted Voids, Test Run # 2*) - For informational purposes only.

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