



SEARCH

Logged in as: sgwill@uark.edu | Logout

[Home](#) [My Tab](#) [About Us](#) [AASHTO Accreditation](#) [Laboratory Assessments](#) [Proficiency Samples](#) [FWD](#) [Library](#) [Resources](#)


**Coarse Aggregate 181/182**  
Final Report Date: 11/6/2013

**PSP Enrollment #3879**  
University of Arkansas  
Fayetteville, Arkansas USA

Submitted by sgwill@uark.edu on 10/7/2013 at 6:48 PM

[View Your Data Submission Details](#)

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

Sample 181							Sample 182					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	1650	<b>0.06</b>	0.056	0.028	<b>0.15</b>	<b>5</b>	<b>0.06</b>	0.055	0.029	<b>0.17</b>	<b>5</b>	0.011	<b>0.05</b>	<b>5</b>	

Sieve Analysis of Aggregates  
**Total Material Passing the 25.0-mm (1-in.) Sieve** (0.1 percent) - T27/C136  
[View Youden Diagram](#) | [View Performance Chart](#)

Sample 181							Sample 182					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	1660	<b>100</b>	99.92	**	**	**	<b>100</b>	99.91	**	**	**	**	**	**	

Sieve Analysis of Aggregates  
**Total Material Passing the 19.0-mm (3/4-in.) Sieve** (0.1 percent) - T27/C136  
[View Youden Diagram](#) | [View Performance Chart](#)

Sample 181							Sample 182					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	1659	<b>86.0</b>	86.06	0.46	<b>-0.13</b>	<b>-5</b>	<b>84.3</b>	84.50	0.43	<b>-0.46</b>	<b>-5</b>	0.33	<b>-0.31</b>	<b>-5</b>	

Sieve Analysis of Aggregates  
**Total Material Passing the 12.5-mm (1/2-in.) Sieve** (0.1 percent) - T27/C136  
[View Youden Diagram](#) | [View Performance Chart](#)

Sample 181							Sample 182					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	1660	<b>48.5</b>	47.87	1.68	<b>0.38</b>	<b>5</b>	<b>49.6</b>	48.42	1.74	<b>0.68</b>	<b>5</b>	0.78	<b>0.50</b>	<b>5</b>	

Sieve Analysis of Aggregates  
**Total Material Passing the 9.5-mm (3/8-in.) Sieve** (0.1 percent) - T27/C136  
[View Youden Diagram](#) | [View Performance Chart](#)

Sample 181							Sample 182					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	1659	<b>14.7</b>	14.01	0.55	<b>1.24</b>	<b>4</b>	<b>13.3</b>	13.32	0.51	<b>-0.05</b>	<b>-5</b>	0.37	<b>-1.37</b>	<b>-4</b>	

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 181							Sample 182					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	1660	<b>0.5</b>	0.46	0.20	<b>0.20</b>	<b>5</b>	<b>0.4</b>	0.46	0.20	<b>-0.30</b>	<b>-5</b>	0.07	<b>-1.01</b>	<b>-4</b>	

Coarse Aggregate Specific Gravity and Absorption  
**Bulk Specific Gravity [or Relative Density, OD for C127]** - T85/C127  
[View Youden Diagram](#) | [View Performance Chart](#)

Sample 181							Sample 182					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	1554	<b>2.618</b>	2.6169	0.0051	<b>0.21</b>	<b>5</b>	<b>2.619</b>	2.6162	0.0050	<b>0.55</b>	<b>5</b>	0.0028	<b>0.44</b>	<b>5</b>	

Coarse Aggregate Specific Gravity and Absorption  
**Bulk Specific Gravity, SSD [or Relative Density, SSD for C127]** - T85/C127  
[View Youden Diagram](#) | [View Performance Chart](#)

Sample 181							Sample 182					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	1554	<b>2.628</b>	2.6280	0.0039	<b>0.00</b>	<b>-5</b>	<b>2.629</b>	2.6274	0.0037	<b>0.43</b>	<b>5</b>	0.0022	<b>0.50</b>	<b>5</b>	

Coarse Aggregate Specific Gravity and Absorption  
**Apparent Specific Gravity [or Apparent Relative Density for C127]** - T85/C127  
[View Youden Diagram](#) | [View Performance Chart](#)

Sample 181							Sample 182					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	1553	<b>2.644</b>	2.6467	0.0033	<b>-0.81</b>	<b>-5</b>	<b>2.646</b>	2.6462	0.0028	<b>-0.08</b>	<b>-5</b>	0.0019	<b>0.92</b>	<b>5</b>	

Coarse Aggregate Specific Gravity and Absorption

**Absorption (0.01 percent) - T85/C127**[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Lab Data	Sample 181				Sample 182				Repeatability(within-lab)			
			Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
10	1555	<b>0.38</b>	0.434	0.066	<b>-0.81</b>	<b>-5</b>	<b>0.39</b>	0.435	0.066	<b>-0.68</b>	<b>-5</b>	0.030	<b>0.21</b>	<b>5</b>

**Abrasion of Coarse Aggregate****Percentage of Loss by Abrasion and Impact (0.01 percent) - T96/C131**[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Lab Data	Sample 181				Sample 182				Repeatability(within-lab)			
			Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
11	584	--	47.568	1.968	--	--	--	48.204	1.846	--	--	--	--	--

**Sulfate Soundness of Aggregates****Sodium Sulfate-Percentage of 19.0 to 9.5-mm fraction passing 8.0-mm sieve (0.01 percent) - T104/C88**[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Lab Data	Sample 181				Sample 182				Repeatability(within-lab)			
			Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
12	346	--	0.321	0.300	--	--	--	0.322	0.279	--	--	--	--	--

**Sulfate Soundness of Aggregates****Sodium Sulfate-Percentage of 9.5 to 4.75-mm fraction passing 4.0-mm sieve (0.01 percent) - T104/C88**[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Lab Data	Sample 181				Sample 182				Repeatability(within-lab)			
			Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
13	345	--	0.416	0.308	--	--	--	0.429	0.314	--	--	--	--	--

**Sulfate Soundness of Aggregates****Magnesium Sulfate-Percentage of 19.0 to 9.5-mm fraction passing 8.0-mm sieve (0.01 percent) - T104/C88**[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Lab Data	Sample 181				Sample 182				Repeatability(within-lab)			
			Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
14	165	--	0.553	0.411	--	--	--	0.585	0.418	--	--	--	--	--

**Sulfate Soundness of Aggregates****Magnesium Sulfate-Percentage of 9.5 to 4.75-mm fraction passing 4.0-mm sieve (0.01 percent) - T104/C88**[View Youden Diagram](#) | [View Performance Chart](#)

	Total Labs	Lab Data	Sample 181				Sample 182				Repeatability(within-lab)			
			Avg	1S	Z-Score	Rating	Lab Data	Avg	1S	Z-Score	Rating	1S	Z-Score	Lab Rating
15	165	--	0.889	0.582	--	--	--	0.903	0.573	--	--	--	--	--

\*\* Ratings Suppressed

-- No Data Submitted or Data Out of Accepted Range

**\*\* Suppressed Items:**

**Sieve Analysis of Aggregates** (Total Material Passing the 25.0-mm (1-in.) Sieve) - Since nearly all laboratories submitting results for Test No. 2 reported 100 percent passing, no ratings have been assigned for this test and the scatter diagram on the AMRL website has been omitted.



AASHTO Materials Reference Laboratory

© 2013 AASHTO Materials Reference Laboratory. All Rights Reserved.

[Contact Us](#) | [Terms of Use](#) | [Privacy Policy](#)

ISO 9001:2008 Certified