2005 Roofing Asphalt Proficiency Program Report

Proficiency Samples 01 and 02

AUGUST 2005

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ASPHALT INSTITUTE

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To: Participants in the 2005 Proficiency Sample Program for Roofing Asphalts

Re: Final Report for Proficiency Samples 01 and 02

Enclosed is information on the analysis of data from Roofing Asphalt Binder Proficiency Samples 01 and 02 distributed in June 2005. The first page of the report is a summary that indicates your laboratory's data compared to the average results for all participating labs, after discarding data that is three or more standard deviations from the mean. The information in the last two columns show a rating based on how closely your laboratory's data matches the average result for the sample/test. The best rating is a "5" indicating results that are within one standard deviation of the mean. The worst rating is a "0" indicating results that are three or more standard deviations from the mean. A negative sign before the rating means that the lab result is lower than the average; otherwise the lab result is higher than the average.

The second page of the report is a summary table showing statistical data for each test. The standard deviation and the acceptable range of two test results (multi-laboratory d2s) are calculated for each sample/test.

Pages 3 and 4 of the report are scatter diagrams. For each test, Sample 01 results are plotted against Sample 02 results. Dashed vertical and horizontal lines represent the average value for each sample. It is desirable to be near the intersection of these two lines indicating that your laboratory's test results match the average results for all participating labs. It is also desirable that your laboratory's data point is close to the diagonal from the bottom left of the graph to the top right. Data points far from this diagonal may indicate a problem with test repeatability within the lab.

In the future, a set of performance charts will also be added to the report to allow you a look at the performance trend on a particular test over a period of time. In this manner a consistent bias can be identified leading to potential changes in equipment or laboratory procedures.

We appreciate your interest in the 2005 Proficiency Sample Program for Roofing Asphalts. Please contact me (859-288-4984 or manderson@asphaltinstitute.org) or our program coordinator, Shay Emmons (859-288-4982 or semmons@asphaltinstitute.org) if you have any questions about the report or suggestions for improvement.

Sincerely,

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2005 Roofing Asphalt Proficiency Sample Program Report
Results for Laboratory

Sample Program Numbers 01 and 02

Test	Lab Data 01	Lab Data 02	Averages 01	Averages 02	Ratings 01	Ratings 02
ASTM D92						
Flash Point by Cleveland Open Cup (F)			581.4	584.0		
ASTM D36						
Ring & Ball Softening Point (F)			220.5	220.7		
ASTM D5						
Penetration at 77F, 100g, 5s (0.1 mm)			15.6	16.5		
ASTM D4402						
Rotational Viscosity at 400F (cP)			309.9	329.1		

Notes:

Ratings shown were calculated from computed standard deviations. A negative number is an indication that the lab result is lower than the average. A positive ranking means that the lab result is higher than the average. Ratings are as follows:

"5" data within 1.0 standard deviations of the mean.
"4" data within 1.5 standard deviations of the mean.
"3" data within 2.0 standard deviations of the mean.
"2" data within 2.5 standard deviations of the mean.
"1" data within 3.0 standard deviations of the mean.
"0" data that is 3.0 or more standard deviations from the mean.

A blank result means that no data was supplied by the laboratory. Data resulting in a "0" rating is 3.0 or more standard deviations from the mean, and was therefore excluded from the statistical analysis.

Labs are cautioned that a single low rating, or pair of ratings, may not be cause for concern. However, a continuing trend of low ratings on several pairs of proficiency samples suggests that the laboratory should re-examine its test procedures and equipment to ascertain potential sources of error.

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Summary Table

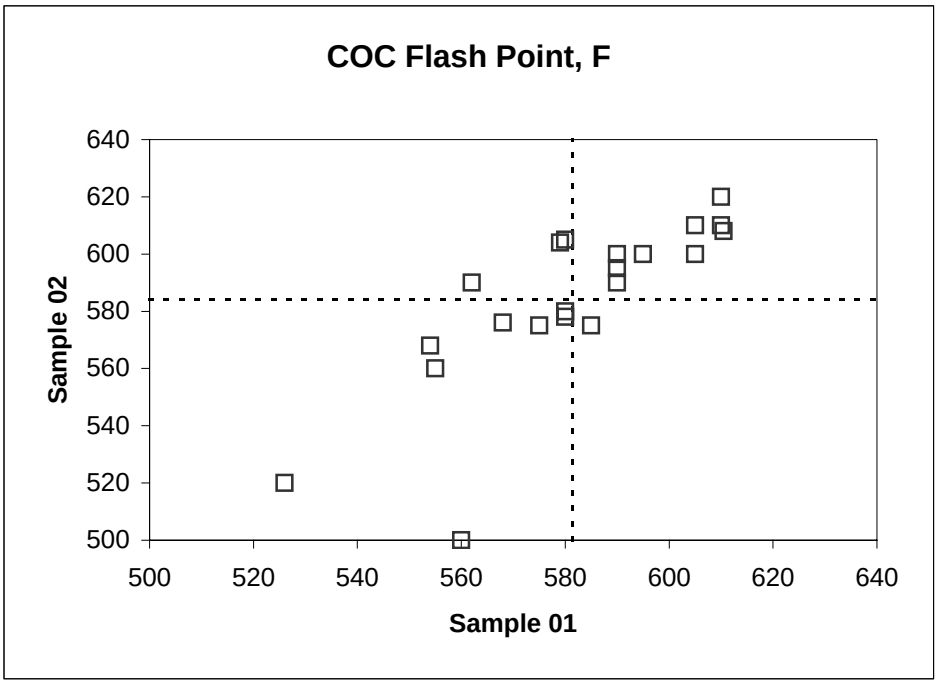
Sample 01

Test Result	No. Labs	Avg.	Standard Deviation (1s)	Coefficient of Variation (1s%)	Acceptable Range of Two Results	
					d2s	d2s%
ASTM D92	21	581.4	21.9	3.8%	62.0	10.7%
Flash Point by Cleveland Open Cup (F)	21	581.4	21.9	3.8%	62.0	10.7%
ASTM D36	20	220.5	6.5	2.9%	18.3	8.3%
Ring & Ball Softening Point (F)	20	220.5	6.5	2.9%	18.3	8.3%
ASTM D5	20	16.3	2.5	15.2%	7.0	43.0%
Penetration at 77F, 100g, 5s (0.1 mm)	18	15.6	1.0	6.4%	2.8	18.0%
ASTM D4402	17	309.9	49.2	15.9%	139.3	45.0%
Rotational Viscosity at 400F (cP)	17	309.9	49.2	15.9%	139.3	45.0%

Sample 02

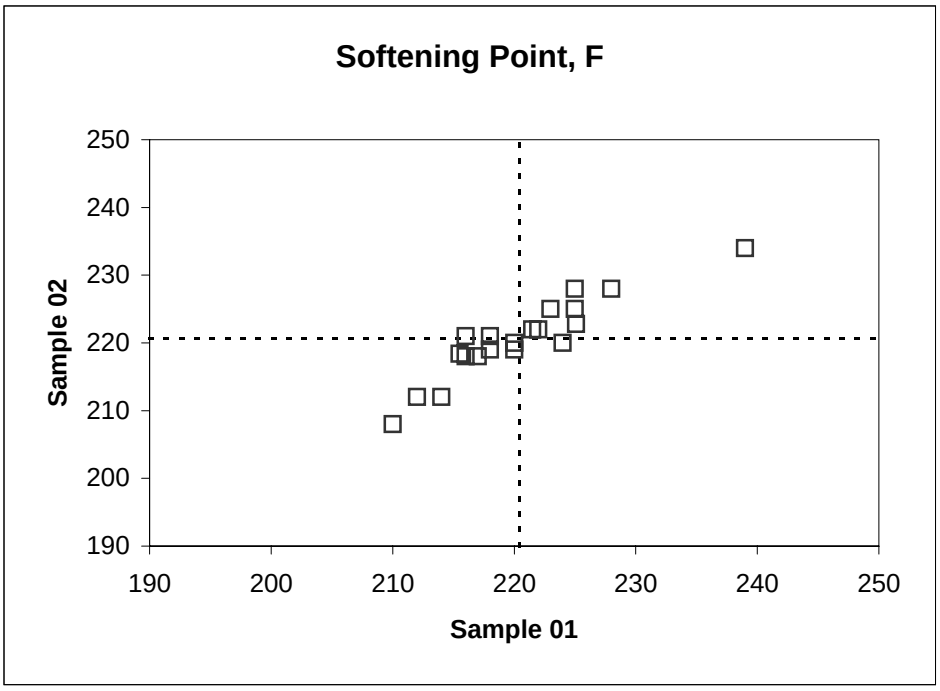
Test Result	No. Labs	Avg.	Standard Deviation (1s)	Coefficient of Variation (1s%)	Acceptable Range of Two Results	
					d2s	d2s%
ASTM D92	21	584.0	29.4	5.0%	83.2	14.2%
Flash Point by Cleveland Open Cup (F)	21	584.0	29.4	5.0%	83.2	14.2%
ASTM D36	20	220.7	5.9	2.7%	16.8	7.6%
Ring & Ball Softening Point (F)	20	220.7	5.9	2.7%	16.8	7.6%
ASTM D5	20	17.0	2.9	17.0%	8.2	48.1%
Penetration at 77F, 100g, 5s (0.1 mm)	19	16.5	2.0	12.2%	5.7	34.4%
ASTM D4402	17	329.1	63.5	19.3%	179.8	54.7%
Rotational Viscosity at 400F (cP)	17	329.1	63.5	19.3%	179.8	54.7%

Note: Shaded cells show results after removing outlying data (3 or more standard deviations from the mean).



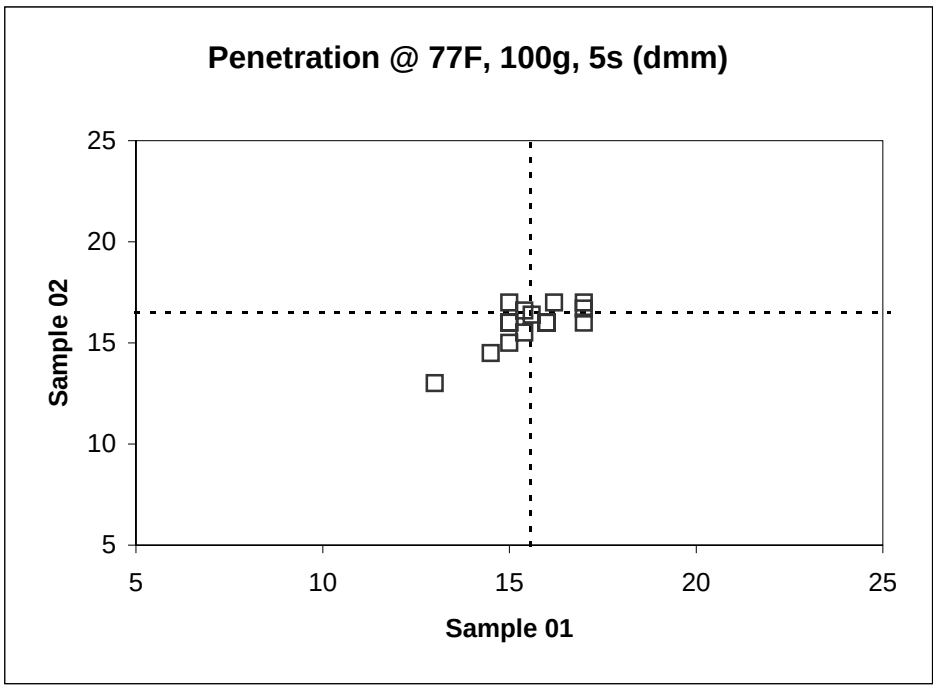
Sample 01	Average	581.4	Std. Dev.	21.9
Sample 02	Average	584.0	Std. Dev.	29.4

Labs Excluded: None



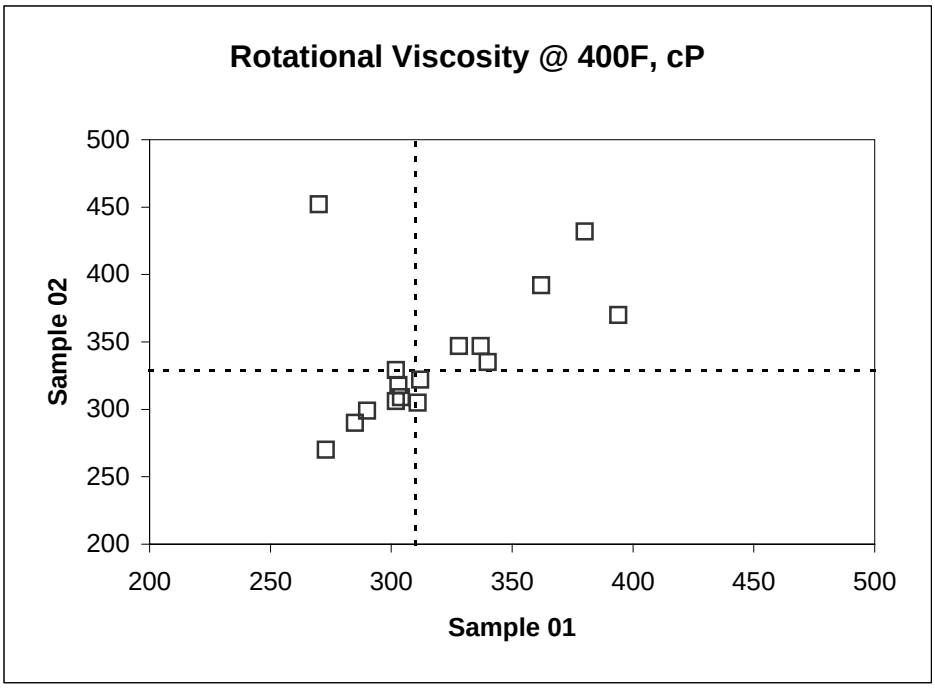
Sample 01	Average	220.5	Std. Dev.	6.5
Sample 02	Average	220.7	Std. Dev.	5.9

Labs Excluded: None



Sample 01	Average	15.6	Std. Dev.	1.0
Sample 02	Average	16.5	Std. Dev.	2.0

Labs Excluded: 15, 16, 19



Sample 01	Average	309.9	Std. Dev.	49.2
Sample 02	Average	329.1	Std. Dev.	63.5

Labs Excluded: None

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