



Proficiency Sample Program for Roofing Asphalts Performance Charts

Performance Charts are used to help identify trends in a laboratory's data that could be indicative of equipment or procedural problems. For each test, a lab manager would like to see:

- paired data within each set of samples grouped closely. This is indicative of good repeatability; and
- the average of the paired data set (shown as a line on the Performance Chart) close to the mean (0.0), indicating a laboratory that produces test data similar to the average of all labs.

Four Performance Charts are shown for the Asphalt Institute Laboratory representing Sample Pairs 01-02, 03-04, and 05-06 in 2005, 2006, and 2007, respectively. Although other tests (like Penetration at 0°C and 46°C) have been added since 2005, they are not included since there has, at the most, been only two years of data for these tests.

Analysis of the Performance Charts for the Asphalt Institute Laboratory tells us the following:

- The Flash Point, Penetration, and Rotational Viscosity Charts show good repeatability (paired data grouped together) and reasonable conformance to the mean (within ± 1 standard deviation of the mean for each sample).
- The Flash Point and Penetration Charts show a steady trend in one direction. This is only a concern if the data continues in the same trend for future samples, thus getting further from the mean. If this happens, the technicians should examine test equipment to make sure it is in good working condition, and procedures, to ensure that a procedural change hasn't occurred that would impact the results.
- The Softening Point Chart looks reasonable until the last sample pair (05-06). For this pair, one of the data points is well below the mean (nearly -3) while the other is much more reasonable. This is likely an indication of an error that occurred in testing or reporting. This shouldn't be a concern unless future sample pairs indicate similar poor repeatability.

R. Michael Anderson, P.E.
25 February 2009

Laboratory Performance Charts
Roofing Proficiency Sample Program

February 2009
Asphalt Institute

