ENGINEERING REPORT

Subject: Surface Roughness Effect on Oil Absorption

Date: 5/17/17

Place: International Training & Research Center

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Purpose:

Test to compare oil absorption results on the same ball when it is sanded with different grit abralon pads.

Summary:

Polished balls have slower oil absorption times and higher standard deviation in the results (larger range of total results). Balls sanded with 500-grit or 1000-grit absorb oil faster than 2000-grit or 4000-grit. The standard deviation (range of results) was about the same with 2000, 1000 and 500-grit. So, we can receive balls intended for any additional testing that are sanded between 500 and 1000-grit finish and test for oil absorption to determine repeatability within a brand, but not use it to determine final oil absorption values, which still has to be done at 500-grit.

Discussion:

We conducted an oil absorption test with different surface roughness on two balls. Both arrived polished and we ran our normal oil absorption test. Then we sanded it with a 4000-grit finish and tested again. This was repeated with 2000-grit, 1000-grit and 500-grit. We then repeated the test in reverse (500, 1000, 2000 and 4000-grit). Below are the graphs of the results.

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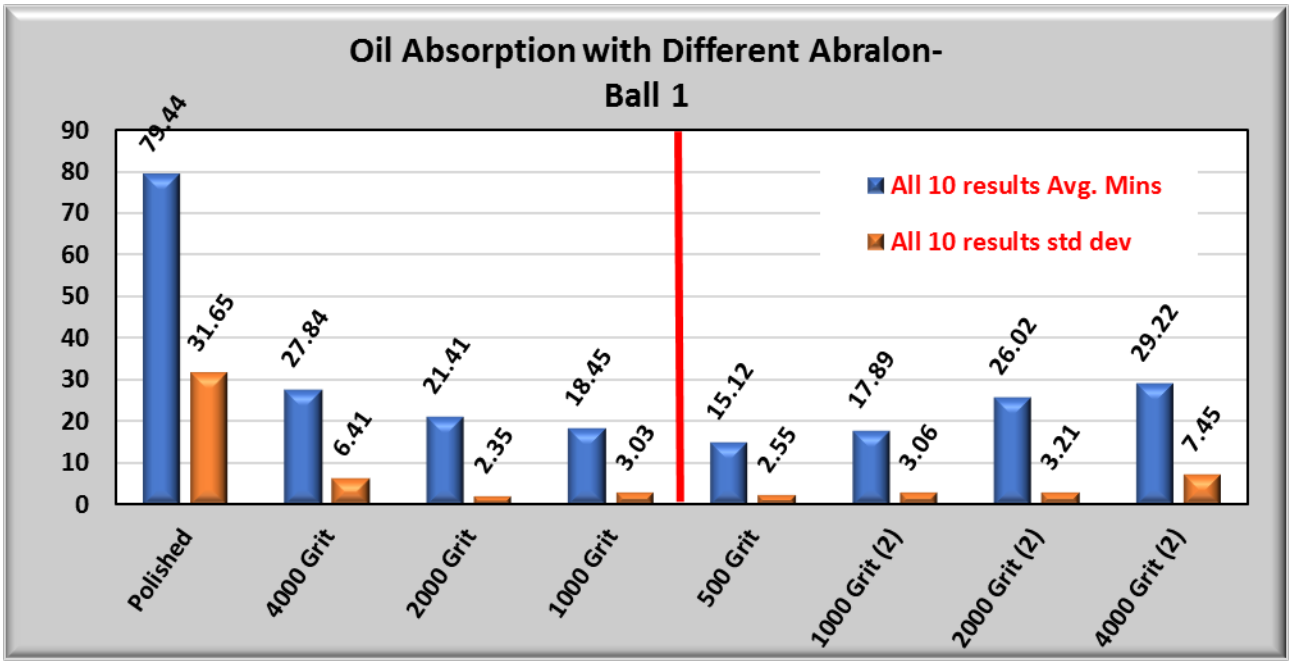
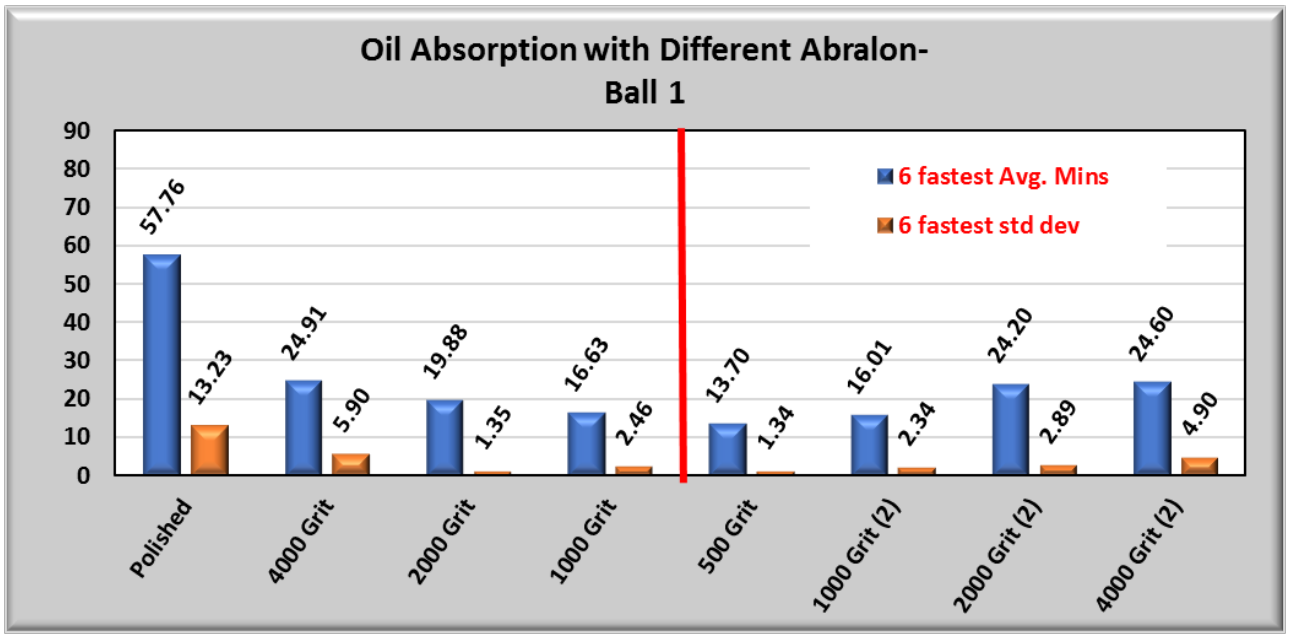
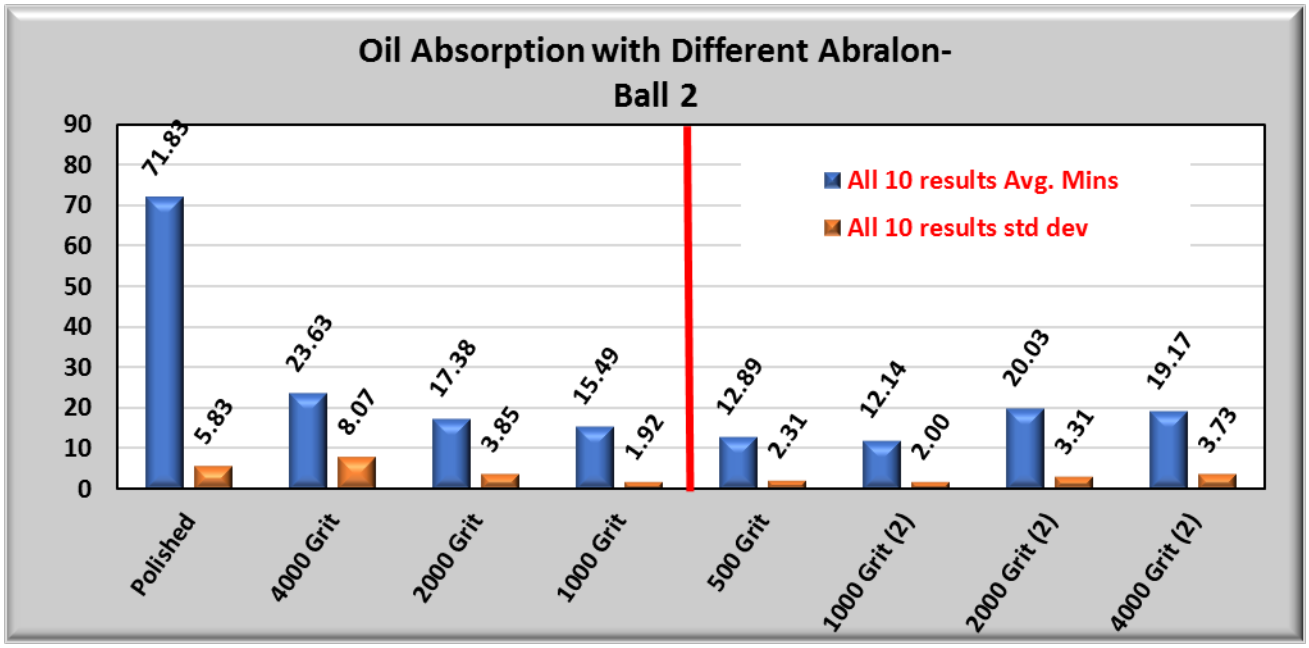
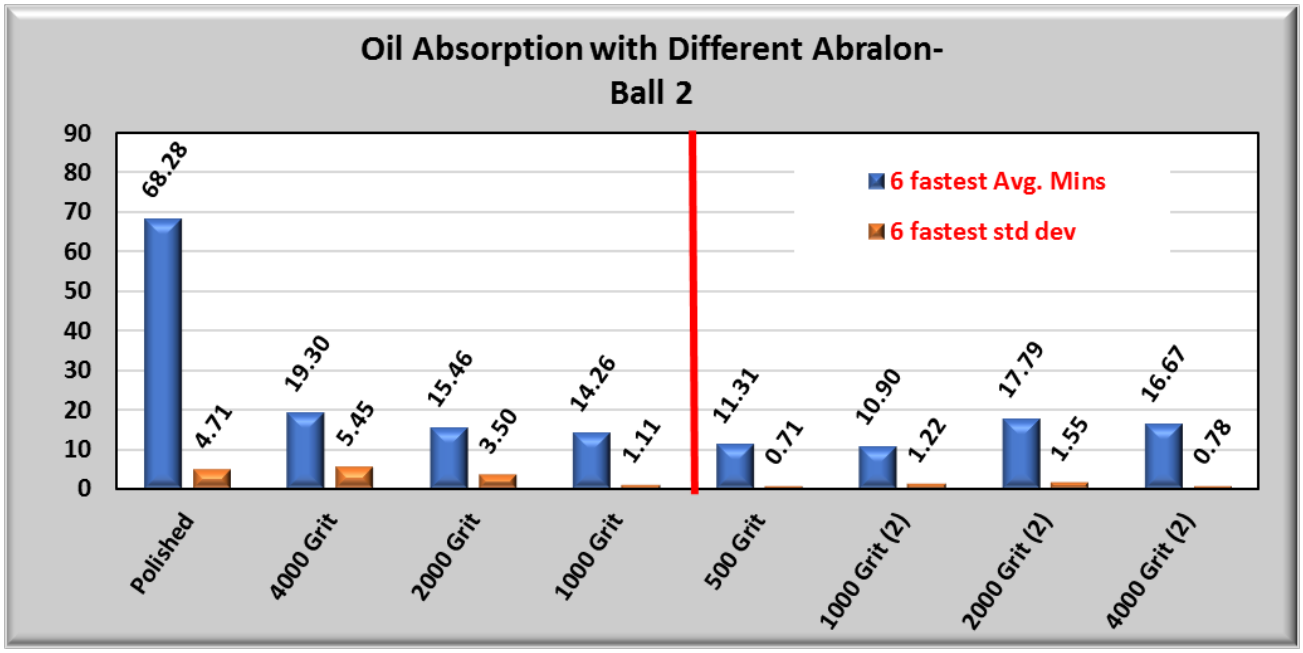
Ball 1 results for all 10 oil drop tests and the six fastest oil times:





Ball 2 results for all 10 oil drop tests and for the six fastest oil times:





For both balls, the polished balls absorbed oil at a much slower rate. We are not sure if some polish remained on some areas of the ball when they were sanded with 4000-grit abralon, resulting is some slower oil absorption times. Therefore, we feel the results after the 500-grit sanding might be better examples; feeling that the polish should have been removed by then and all testing after that point. Therefore, we will look at the results to the right side of the red line in the above graphs. The 500-grit and 10000-grit had about the same oil absorption rates. The 2000 and 4000-grit had slower oil absorption times. The standard deviations after the 500-grit sanding in the graphs above was very consistent.