

# ENGINEERING REPORT

**Subject:** Clean vs. Dirty Surface Preparation Water Effect on Oil Absorption

**Date:** 7/14/2017

**Place:** International Training & Research Center

**Present:** Allyson Stanton

**Purpose:**

To determine if oil absorption times are affected by using dirty rinse water compared to fresh water when prepping the surface of the ball for testing.

**Summary:**

A single ball model was chosen for testing based on quick oil absorption rates. Two of these balls were sanded using clean water, tested for oil absorption and retested after resurfacing with dirty water. The data shows no significant difference in oil absorption performance based on water quality.

**Procedure:**

Both a 14-pound and 15-pound ball from the same model were chosen for testing based primarily on quick oil absorption rates and secondarily because they are balls that have not been previously used in other oil absorption projects.

Both balls were prepped with fresh water at 500-grit in the Surface Factory machine for three minutes and nine seconds before being tested for oil absorption. Each ball was tested at 10 random spots across the balls surface including five drops in each of the two colors.

Allowing time for the water in the Surface Factory to build ball residue, both balls were re-tested using the same procedure above two weeks later.

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## Data:

The table below shows the average and standard deviation of all 10 drops from both balls, the average for the six fastest drops, and the difference between the two tests on each ball.

	Clean Water		Dirty Water		Difference	
	Ball A	Ball B	Ball A	Ball B	Ball A	Ball B
10 Drop Avg.	6:06	6:23	6:53	6:06	0:47	0:17
10 Drop St.Dev.	0:30	0:39	1:20	1:02	0:50	0:23
6 Fastest Avg.	5:48	5:57	6:08	5:21	0:20	0:36

The average of the six fastest drops, the primary value used when ranking bowling ball oil absorption rates, only show a difference of 20 and 36 seconds, which is well within our 3.178-minute gauge discrimination. Also, one ball absorbed faster with clean water and the other ball absorbed faster with dirty water. While the standard deviation for the dirty water is slightly larger, it is not enough to qualify as a significant difference.

## Results:

There is no difference between using clean or dirty water when prepping the ball surface for oil absorption, based on the ball chosen for this test.