

Standard Operating Procedure: SOP-Ball-18 Surface Preparation

## Surface Preparation for Bowling Ball

<u>Rev</u>	<u>Date</u>	<u>Staff Member</u>	<u>Purpose</u>
Origination date: 10/16/2019		Originator: T Frenzel	



**Purpose:** To repeatably prepare the surface texture of bowling balls for Surface Roughness, Friction, and Oil Absorption testing.

**Materials and test conditions:**

- Bowling Ball Samples
- Test at 70-77 degrees Fahrenheit
- Surface Preparation Machine
  - Surface Factory
  - Sure Spin (with USBC control box)
- IPA 99% concentration.
- Towel

**Procedure A: Surface Factory**

1. Place a fresh 500 grit Abralon pad on the 500-grit rotator within the surface factory.
2. Place the bowling ball sample within the surface factory. When dealing with samples of differing weights, use the 15-pound sample first on the fresh pad.
3. Close the door to the surface factory
4. Select the 500-grit rotator
5. Increase the time increment to 3 minutes and 9 seconds.
6. Press the enter button, and then the start button.
7. Once the sanding has been completed, open the door to the surface factory and remove the ball sample
8. Clean the ball's surface with IPA to remove excess moisture.
9. The preparation of the ball is now complete.
10. Repeat steps 2 through 9 for the next ball sample.
11. The 500-grit Abralon pad needs to be replaced once it has been used twice.



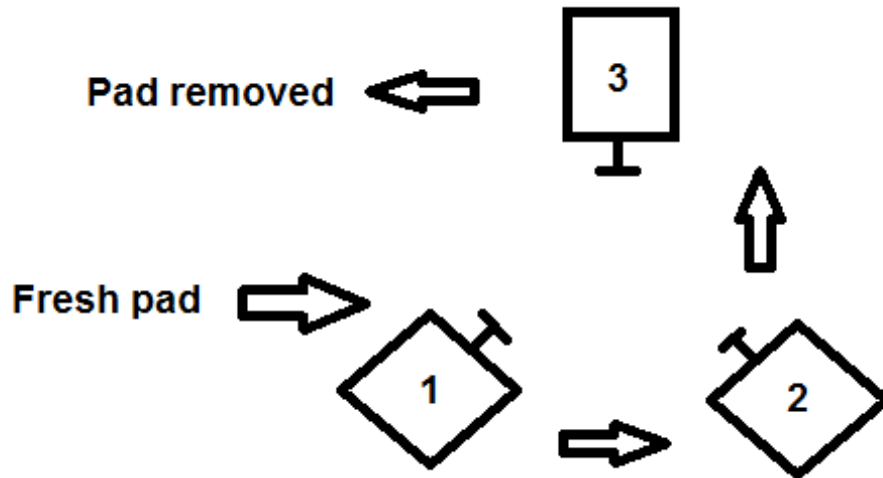
**Procedure B: Sure Spin**

1. Enter correct settings into the USBC control box:
  - a. Press the menu button
  - b. Navigate the menu with the ↑ ↓ buttons until the display reads “Parameter Adjust”
  - c. Press the select button
  - d. Navigate the menu with the ↑ ↓ buttons until the display reads “Run Time (s)”
  - e. Press the select button
  - f. Adjust the Run Time setting with the ↑ ↓ buttons to 120 seconds.
  - g. Press the select button
  - h. Navigate the menu with the ↑ ↓ buttons until the display reads “Forward Time (s)”
  - i. Press the select button
  - j. Adjust the Forward Time setting with the ↑ ↓ buttons to 3.0 seconds.
  - k. Press the select button
  - l. Navigate the menu with the ↑ ↓ buttons until the display reads “Reverse Time (s)”
  - m. Press the select button
  - n. Adjust the Reverse Time setting with the ↑ ↓ buttons to 3.0 seconds.
  - o. Press the select button
  - p. Press the menu button to back out of the menus until the device settings are displayed.
  - q. When set-up correctly the device will read:

Run	Fwd	Bwd
120s,	3.0s,	3.0s.

2. Burn in the pads (necessary when no used pads are available)
  - a. Place three, 500-grit Abralon pads one on each of the three rotator wheels of the Sure Spin.
  - b. Press the Pump button on the USBC control box to activate the water
  - c. Use the water to wet the 500-grit Abralon pads.
  - d. Press the Pump button again to deactivate the water
  - e. Load a bowling ball into the Sure Spin
  - f. Adjust cups to ensure the ball is well seated.
  - g. Press the Pump button to turn the water back on.
  - h. Wet the entire top surface of the ball
  - i. Position the hose over the top of the ball such that the tip is near the highest point of the ball without touching the ball.
  - j. Press the start button.
  - k. After the sanding is complete, remove the ball and clean it with IPA to remove the moisture.

1. Cycle the pads in a counterclockwise motion such that the motor that changes direction gets a new pad, and the third motor's pad is removed from the system.



- m. Repeat steps 2a through 2k so that the pad on motor 1 will be fresh, the pad on motor 2 will have 1 use, and the pad on motor 3 will have 2 uses.

### 3. Operation

- a. Ensure the pad on motor 1 is fresh 500-grit, the pad on motor 2 has 1 use 500-grit, and the pad on motor 3 has 2 uses 500-grit.
- b. Press the pump button to activate the water
- c. Wet down all three pads
- d. Press the pump button to deactivate the water.
- e. Load ball sample into Sure Spin
- f. Adjust cups to ensure the ball is well seated
- g. Press the pump button to activate the water
- h. Wet the entire top surface of the ball
- i. Position the hose over the top of the ball such that the tip is near the highest point of the ball without touching the ball.
- j. Press the start button
- k. After the sanding is complete, remove the ball and clean it with IPA to remove the moisture.
- l. Cycle the pads in a counterclockwise motion such that the motor that changes direction gets a new pad, and the third motor's pad is removed from the system.

