



Standard Operating Procedure: SOP-BALL-8

## Coefficient of Restitution of a Bowling Ball

<u>Rev</u>	<u>Date</u>	<u>Staff Member</u>	<u>Purpose</u>
3	4/19/22	A. Stanton	Update “Twister pin” to “Standard testing pin”, computer program instructions, ball serial number instructions, and added steps 6 & 7.
2	12/18/19	A. Stanton	Minor updates to equipment/database
1	5/17/2011	J. Milligan	Update procedure since implementation of Labview.
Origination date:06/17/2010		Originator: D. Johnson	



**Purpose:** To determine the coefficient of restitution of a bowling ball.

**Materials:**

- CoR ramp
- Lexan sensor cage
- 4 sensors
- USBC CoR-device capture software with Lenovo computer (or comparable)
- Standard testing pin
- Ball to be tested

**Procedure:**

1. On the desktop, double click on the 'Shortcut to COR Test.exe' icon and select 'Run'.
2. If nothing happens go to My Computer and click on the 'P' drive. Once signed into the 'P' drive close the folder and repeat step 1.
3. Select 'Ball Test' in the Test Type box and click 'Start'.
4. Enter Ball Brand, Ball Model, and the last 4 digits of the Ball Serial Number.
5. Make sure the sensor cage is lined up with the back corners of the COR ramp.
6. Make sure the metal pin base plate is installed and secure.
7. Make sure the rubber ramp liners are centered on the tracks and pulled up to the top of the ramp.
8. Align the standard testing pin against the metal curved plate on the level lane surface with the pin's model label facing towards the ramp.
9. Ensure that the last two sensors on the top of the cage are solid green. (If flashing, adjust accordingly until the light is a solid green).
10. Bring the bowling ball to be tested to the top of the ramp until it triggers the lever. Once the lever is triggered, the program is ready to record data.
11. Catch the pin and ball at bottom of the ramp.
12. Release the bowling ball so that it rolls freely down the rails of the ramp and hits the pin.
13. Align testing pin against the metal curved plate on COR ramp and adjust the position of the pin approximately 36 degrees past its previous position.
14. Repeat steps 7-12 for a total of ten runs.



15. Close the program and shut down the computer.

### **Generate the Test Report**

16. On the (P:) drive of the computer, open the 'BowlingBallCOR' Microsoft Access database.
17. Locate and select 'BallMasterList' from the left column.
18. Using the date filter on the resulting table, look for the date corresponding to the data you need.
19. Find the ball you need and record the COR numbers into Bowling Ball Test Report.
20. Save and exit the database.