Standard Operating Procedure (SOP) for Bowling Ball Testing for the Junior Gold Championships

Introduction

The Junior Gold Championships bring together the nation's top youth athletes to compete for national titles and spots on Junior Team USA. To ensure fair play and uphold the integrity of the competition, USBC conducts equipment testing throughout the event. This process verifies that all bowling balls comply with USBC specifications.

Purpose and Scope

Purpose: This SOP lays out how we handle equipment testing during Junior Gold Championships during the qualifying and advancer rounds. The goal is to keep things fair by making sure all bowling balls meet USBC standards, especially when it comes to hardness
Scope: Definition and acronyms, roles and responsibilities, tools and systems, process overview, Definition and acronyms, roles and responsibilities, tools and systems, process overview, inspection and testing, non-compliant equipment and communications.

Definitions and Acronyms

- **Slow Absorption**: Any ball with an oil absorption time greater than 90 minutes.
- **High Performance**: Advanced, often asymmetrical weight block designed to produce a more aggressive and dynamic reaction on the lane, characterized by a high differential and typically a low radius of gyration (RG).
- **Non-High Performance**: Balls with weak cores and cover stocks that are typically used for spare shooting. Note: Currently approved rubber and polyester or "plastic" balls are considered non-high-performance balls regardless of their other properties.
- **Durometer**: A tool used to measure the hardness of materials like rubber and plastic by pressing a presser foot into the material's surface.
- **78D**: Minimum manufactured hardness for slow absorbing high performance (urethane) bowling balls allowed in Junior Gold Championships Qualifying and Advancer Rounds.
- **CG**: Center of Gravity.

Roles and Responsibilities

- **Senior Director, Short Duration Tournaments and Collegiate Bowling**: Ensure all testing protocols are followed and documented.
- **Center Staff :** Will be responsible for working Testing Team on the SOP requirements
- **Equipment Specifications Team/Testing Team:** Gather, compile and maintain data from the event. In addition, train the tournament staff on set-up, calibration, and use of the manual durometer.

Tools and Systems

- Durometer (checks for hardness)
- Manual testing stand
- Infrared thermometer
- Data collection sheet (kept in SharePoint)
- Ball inspection forms

Process Overview

Bowling balls identified as 78D slow absorbing high performance bowling balls will be tested based on the Step-by-Step Inspection Process.

Step-by-Step Inspection Process

a) **Testing Timing**
   i) Prior to each qualifying squad and advancer round, the scorer will randomly pull one-in-five athletes' ball cards.
   ii) During the check-in process, the tournament staff who are doing check-in verify that the equipment the bowler is bringing matches what is listed on the card.

b) **Visual Inspection** - each bowling ball will be rotated to verify:
   i) The make, model and serial number are present.
   ii)There are no cracks or fissures.
   iii)There are no extra holes.
   iv)There is a gripping orientation mark if no thumbhole.
   v)Balance - CG orientation.
   vi)There is no evidence of tampering.

c) **Testing** – 78D slow absorbing high performance bowling balls will be checked for hardness and temperature by:
   i) Placing by the ball in the testing apparatus and checking in five (5) spots around the equator of the ball (compared to the pin).
   ii) Simultaneously checking the ball's temperature with an infrared thermometer.
   iii) The following data will be collected from the testing: The name of the ball, the ball's serial number, the temperature of the ball, and the durometer reading of each punch (5).
   iv) Any ball testing lower than 73 hardness will be tested (punched) 5 additional times.

   Note: *In addition to random testing by squad, USBC may periodically conduct large-scale testing sessions during the event.*

d) All compliant bowling balls will be returned to the competitor.

Non-Compliant Equipment

a) If a non-compliant bowling ball can be repaired/fixed, it may be used in competition provided the repair work is completed, and the ball goes through the inspection and testing process and deemed compliant.
b) If a non-compliant bowling ball cannot be repaired/fixed or ineligible for any reason(s) (including but are not limited to missing the manufacturer logo, ball

type, serial number, cracks or fissures, extra holes, missing grip orientation marks, out of balance -CG orientation, or evidence of tampering), the ball must be removed.

i) Tampering with a ball (so it no longer meets USBC specifications, as stated in the USBC Equipment Specifications and Certifications Manual - USBC Rule 17a-1), is grounds for disqualification.

c) When a ball is removed from competition for not meeting Tournament rules and USBC specifications:

i) A non-compliant equipment form (see Appendix A) will be completed by the scale room staff lead, verified and signed by a tournament official.

ii) A copy of the form given to the bowler.

iii) The ball is placed in safekeeping until the conclusion of the squad.

iv) The bowler can retrieve their ball at conclusion of their squad by presenting their copy of the non-compliant ball form.

CALIBRATION

At the beginning of each day of testing, and in between each competition squad a set of four standard balls will be tested for hardness. The standard balls have been tested in the ball testing lab at USBC headquarters and will be used to establish differences in the testing environment as well as monitor the hardness level the tool is measuring at throughout the event.

In the event a durometer is identified as out of calibration, action will be taken to correct the calibration including re-alignment of the testing stand, testing a sanded reactive ball to remove oil for the indenter, and ensuring the durometer stand is operating properly.

If the corrective actions do not resolve the issue, the durometer will be replaced with a back-up durometer that has been calibrated with the USBC approval durometer as part of our group calibration process.

Appendix A

USBC Tournaments Bowling Ball Non-Compliance Form

Please Print

Date _____ Squad _____

Name _____ USBC # _____

Ball Data:

Brand _____ Model _____

Serial Number _____ Color _____

Reason(s) for removal:

Ineligible Ball List	Y / N	Weight Hole	Y / N	Gross Weight	Y / N
Cracked Ball	Y / N	Visible Logo	Y / N	Serial #	Y / N
Balance	Y / N	Hardness	Y / N		

Durometer Reading: Spot 1 _____ Spot 2 _____ Spot 3 _____ Spot 4 _____ Spot 5 _____

This ball has been deemed ineligible for use at this USBC Tournament.

YES / NO

This ball is ineligible for use in any certified USBC league or tournament.

YES / NO

Official's Signature_____

Bowling Ball Returned Y / N Bowler's Signature_____

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