

University of South Alabama
Civil Engineering Department

Rules and Regulations

For

Concrete Bocce Ball



Presented by the Student Chapter of the American Society of Civil Engineers at the University of South Alabama for the USA-ASCE High School Competition

Rules Updated November 2023

Rules adapted from the University of Tennessee Bocce Ball competition
Rules subject to change

Concrete Bocce Ball

Requirements

Each team will bring 4 cylinders to the competition; 3 of the cylinders will be decorated for aesthetics, judging, and tournament play; while the 4th will be left undecorated and used for compressive testing. Each team needs to bring a copy of their mix design for the bocce ball competition.

*See concrete canoe rules for specifications on mix design.

Specifications

1. Each concrete cylinder will have a 4” diameter and an 8” height.
2. Cylinders should be made using the same mix design as the concrete canoe.
3. No reinforcement shall be used in the cylinders (e.g. bars, meshes, or grids).

*Molds will be provided upon request

Aesthetics

1. Each team will bring 3 decorated cylinders that are decorated to their theme of choice.
2. The 3 decorated cylinders will be presented to the judges for scoring.

Tournament Play

Play will follow normal Bocce ball rules with some “house rules” that overrule classic play.

1. The game will be doubles with only one player bowling per frame.
2. 3 decorated concrete cylinders will be used for playing instead of balls.
3. The court will be 50’ long by 10’ wide.
4. A foul line will be placed 5’ from the end of the court.
5. The court will not include side and back boards.
6. Any cylinder tossed outside of the court will be considered out of bounds and not count for the scoring of that frame.
7. The first team to reach 12 points at the end of a frame wins, however a team that scores over 12 points will “bust” and be reset to 9 points.
8. If a cylinder breaks during play, then that cylinder will no longer be used and will not be scored for that frame.
9. A cylinder will be considered broken whenever it has no section measuring a 4” diameter and an 8” height.

To learn how to play bocce ball check out <https://www.youtube.com/watch?v=v3sID-qDIW8>

Concrete Canoe Rules For Specifications

Specifications

1. The canoe shall have a length of at least 24 inches and shall not be more than 36 inches.
2. The canoe shall have a beam width of 6 to 12 inches.
3. The canoe shall have an outside height of 3 to 6 inches.
4. The canoe shall have an inside depth of 2 to 4 inches.
5. Other elements of the canoe to include, but not limited to thwarts, ribs, and rockers, shall not be measured and their dimensions and locations are at the discretion of the team.

Concrete Design

The concrete mix of the model canoe shall consist of any of the following materials:

1. Fly Ash, cement, fibers, aggregates, admixtures.
2. Admixtures such as Water-Reducing (Normal, Mid-Range, and High-Range), Set-Controlling Admixtures, Air-Entraining Admixtures, Coloring Admixtures/Agents and Concrete Pigments, and Polymer Modifiers are permitted.
3. Specialty Admixtures, such as but not limited to, shrinkage reducers, integral capillary water proofers, and viscosity-modifying admixtures are permitted.
4. Epoxy resins (such as acrylic, phenolic, and polystyrene resins), their curing agents, asphalt emulsions, or similar materials shall not be considered as specialty admixtures and are prohibited.

*Materials will not be provided

Rubric

Team Name: _____

Judge Name: _____

Category	Requirements	Points
Tournament	<input type="checkbox"/> - First Place (40 points) <input type="checkbox"/> - Second Place (36 points) <input type="checkbox"/> - Third Place (32 points) <input type="checkbox"/> - Nth Place (40-4(N-1) points)	
Concrete Cylinder (Compression Test)	<input type="checkbox"/> - First Place (30 points) <input type="checkbox"/> - Second Place (27 points) <input type="checkbox"/> - Third Place (24 points) <input type="checkbox"/> - Nth Place (30-3(N-1) Points) <input type="checkbox"/> *Bonus 10 Points for any cylinder reaching 6000 psf	
Aesthetic	<input type="checkbox"/> - Creativity (10 points) <input type="checkbox"/> - Consistent Theme (5 points) <input type="checkbox"/> - Clearly Communicated Theme (5 points)	
Mix Design	<input type="checkbox"/> - Meets all Specs (10 Points) <input type="checkbox"/> - Failure of each spec (-1 Point)	

Compressive Strength: _____

Total: _____