University of South Alabama
Department of Civil Engineering

Rules and Regulations

For

Concrete Ping Pong

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

Updated October 2026

Concrete Ping Pong:

Overview

Each team will design and construct a pair of ping-pong paddles to be used in a ping pong tournament. The tournament will be bracketing style developed on the day of the competition. Judging will be based on concrete mix design, aesthetics, and scoring in the tournament.

Players

Each school should provide a minimum of 2 players (one team). A team consists of 2 players; however, 4 students may be selected for substitution.

Paddle Specifications

1. Dimensions
    a. Blade Length: Length must be between a minimum of 6-1/2 inches and a maximum of 6-3/4 inches
    b. Blade Width: Width must be between a minimum of 5-3/4 inches and a maximum of 6 inches
    c. Blade Thickness: Total blade thickness must be between 1/2 inch and 3/4 inch
    d. Handle Length: 3 inches to 4 inches in length x 1 inch to 1-1/4 inch width x ¾ inch to 1 inch thick.
    e. Flatness: The blade face must be continuously smooth and flat throughout the face
    f. Rubber coatings are not permitted

2. Weight
    a. The Paddles will be weighed at entry and after tournament play to determine integrity and durability.
    b. The lightest overall entry weight and percentage of weight loss will be included in the overall scoring.
    c. The post-play weight will only be the portion of the paddle that is used to hit the ball (if the handle breaks off, it will not be weight).

3. Material Constraints
    a. Reinforcement: Alkali-resistant glass fiber mesh, carbon fiber, basalt fiber, steel micro-wires, nylon/polypropylene fibers, or composite scrims are allowed. Continuous solid metal plates or solid wood cores inside the concrete blade are strictly prohibited.
    b. Handle & Joint: Handles may be cast integrally as concrete or fabricated separately (e.g., 3D-printed plastic, wood, or aluminum) and mechanically bonded/anchored.

Concrete Mix Specifications

The concrete mix shall consist of the following materials:

1. Fly Ash, cement, fibers, aggregates, admixtures
2. Aggregates may include any natural, manufactured, or recycled material.
3. 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.
4. Specialty Admixtures, such as but not limited to, shrinkage reducers, integral capillary water proofers, and viscosity-modifying admixtures are permitted.

Aesthetics

Decorating paddles is not mandated, however it is highly encouraged! Ensure the school name is on the container or handle for the paddles. Paddles may be decorated as desired and are not required to be uniform. One coat of paint is allowed with one coat of transparent sealer. Coatings MAY NOT be used to strengthen concrete. Adhesives or loose items MAY NOT be attached to the paddle blade.

Tournament Rules

Teams will be paired at random on the day of the competition. The match making will work on double elimination (or single elimination depending on bracket size) once the first matches are played.

- Match Format: Matches consist of a best-of-3 games format. Games are played to 11 points (must win by 2 points). Service alternates every 2 points.
- Paddle Usage: Teams must use their engineered concrete paddle for all standard shots. Switching to a commercial wooden paddle mid-match is strictly prohibited.
- Breakage Rules: If hairline cracking occurs during a rally but remains intact, play continues. If major breakage occurs (detachment/snapping), the point is awarded to the opponent. Teams have 1 minutes to substitute one (1) pre-inspected backup paddle or continue play with the remaining portion of the paddle.
- Safety and sportsmanship: Should a team show poor sportsmanship the judge may disqualify that team.