

Concrete Bowling

Concrete Bowling combines design, engineering abilities, and your skills on the alley!

Judging of the competition will be based on durability, aesthetics, and bowling skills!

Participation:

- Each team may consist of two to four participants
- All participants must be registered attendees of the conference.

Bowling Rules:

- Standard bowling rules will apply to the actual bowling competition.
- Each team will bowl 4 frames, for a maximum of nine bowls (in case of a spare or strike in last frame).
- Standard bowling pins will be used, and the alley will be Masonite with wood wall gutters.
- In the case of a tie, the poster will be the determining factor.

Design and Construction Rules:

- The bowling balls may not be smaller than 7" and may not exceed 9" in diameter
- The weight of the ball should not exceed 18lb
- The ball's shape must be spherical
- No resin or epoxy may be used
- The major constituent of the ball (at least 60%) must be hydraulic (Portland) cement. No prepackaged or premixed concrete may be used.
- Reinforcements such as reinforcing mesh, metallic or non-metallic, may be used. Absolutely none of the reinforcement may be exposed in the original ball. (Exposure during competition as a result of breakage is allowed.)
- The mix design is at the discretion of the school, but remember: this is an engineering competition, so get creative!

Presentation:

- Each team must submit a poster (24" x 36") at the competition
- The poster must identify
 - School name
 - Mix Design
 - Construction materials and techniques
- The aesthetics of the bowling balls and posters will be judged by professionals.

Scoring:

- Durability (40 points)
 - If a ball loses more than 40% of its total weight, it will be disqualified.
 - A damaged ball may be used after the first roll, but it must roll to the pins (no throwing).

Durability Measurement:
$$\left[\frac{(\text{Weight of largest remaining piece})}{(\text{Weight of ball before rolling})} \right] \times 40 \text{ points}$$

- Aesthetics (40 points)
 - Aesthetics of the ball will be judged at the beginning of competition and the specifics left to the discretion of each individual judge.
- Bowling Score (120 points)
 - Standard bowling rules will apply. Each bowling frame will have a maximum possible score of 30 points, for a possible total score of 120 points.

Percentage	Category	Points
20%	Durability	40
20%	Aesthetics	40
60%	Bowling Score	120
100%	Total	200