

ASCE Region 6 Concrete Frisbee Rules

The purpose of this competition is to combine design skill and creativity to construct, market, and operate a Concrete Frisbee at the ASCE Region 6 Student Symposium.

Participation

A team must consist of between two (2) and four (4) students from a university in good standing with their respective ASCE Section and ASCE Global. Each team shall fabricate five (5) Concrete Frisbees using the competition mix and construction design. All team members must be registered attendees of the symposium for all days on which the Concrete Frisbee will take place.

There shall be a limit of two teams per university. In the event of multiple entrants per university, each team shall be named in such a way as to easily distinguish between the teams. All team names must include the university name. For this competition, abbreviated school names are acceptable so long as they are generally understood representations of the represented university.

Safety

No team member, spectator, or animal shall at any point attempt to catch a thrown Frisbee. The Competition Area outlined in future sections shall be clear of people and pets for the duration of the competition.

Design and Construction Rules

The following rules shall be adhered to by any participating team. Failure to follow these rules will result in an automatic disqualification. At the judge's discretion, disqualified teams may still be allowed to participate in the frisbee throwing aspect of the competition to see how their Concrete Frisbee would have performed.

- Diameter must be between 8 inches and 12 inches.
- Thickness shall not exceed 2.5 inches.
- No resin or epoxy may be used in the construction of the Concrete Frisbee.
- At least 60% of the Concrete Frisbee's mix design must be hydraulic cement. Pre-packaged or pre-mixed cement is prohibited.
- Reinforcement, such as metallic or non-metallic reinforcing mesh, are allowed at the team's discretion. If reinforcement is used, it shall not be visible.
- School names shall be shown on each Frisbee in the same spelling and length as shown on the Technical Poster.

Technical Component

Concrete Frisbee shall consist of two (2) technical components as outlined below.

Mix Design

The mix design is left up to each individual school so long as it adheres to the mix requirements outlined above. A mix table must be filled out and submitted no later than 5 p.m CT the Monday prior to Competition to the appropriate school's submittal folder. An email stating the submission is complete shall also be sent to

region6judge@gmail.com. The subject line of the email shall read: **Concrete Frisbee Mix Table – [School Name]**. Mix designs received after the deadline will receive an automatic 5-point deduction on the team’s aesthetic score.

Technical Poster

Each team is required to submit one (1) Technical Poster outlining the design process. This poster shall be submitted on a 24” x 36” poster. The poster must be supported in a vertical orientation during judging. No posters laying flat on the ground will be accepted.

Each poster must contain: School name, Mix Design, and Construction Material and Techniques.

Frisbee Rules

Each team is required to test their frisbee through a series of events described below. The host school is responsible for preparing the appropriate spaces.

Scoring

Scoring for the Concrete Frisbee Competition is broken into four categories: durability, aesthetics, distance, and accuracy. The final score, except for those teams disqualified as outlined above, will be calculated as shown in the table below.

Competition Section	Points
Durability	20
Aesthetics	20
Distance	30
Accuracy	30

The following sections as well as the applicable supplemental documents describe, in detail, these scoring components. Scoring shall be based on the ASCE Concrete Frisbee Score Sheet attached to this document.

Durability (20 points)

To test the Concrete Frisbee’s durability, the weight of the frisbee shall be measured prior to the first throw. After the throw, the largest piece remaining of the frisbee (by weight) shall be registered and shall be used for the durability calculation. If more than 20% of the frisbee’s weight is lost after the throw, the team will be disqualified.

The equation used to determine a team’s durability score is below:

$$\text{Durability Score} = \left(\frac{\text{Weight Largest Piece After Throw}}{\text{Original Weight}} \right) * 20$$

Aesthetics (20 points)

Aesthetics shall be judged by each individual judge on a scale of 1 to 10 for the Technical Poster and the Concrete Frisbee combined. The individual scores shall be averaged for the final team score. Judging shall take place prior to the distance and accuracy portions of the competition.

Teams will select one frisbee for aesthetics scoring. The one selected cannot be used in the distance or accuracy scoring. Decoration of a Concrete Frisbee may consist of stain or inlays. Paint of any kind is prohibited. Judging shall be based on texture, finish, overall decoration prior to competition. The Frisbee shall include the same team name as shown on the poster and mix design.

A judge's determination on their aesthetics score may not be disputed. In the case of a tie, the higher aesthetics score will break the tie.

Distance (30 points)

Prior to this portion for this competition, judges shall ensure all safety protocols are achieved.

The Competition Area shall be the area directly in front of the standing line, defined as the line at which the participating team member is directed by judges to stand. This area shall be clear of all peoples and animals for the duration of the competition.

Teams will select two frisbees for distance scoring. The two selected cannot be used in the aesthetics or accuracy scoring. One team member shall stand on the standing line and safely throw the frisbee in the direction as directed by judges. The distance thrown shall then be measured from the standing line to the largest piece of the frisbee that is nearest to the standing line. The distance shall include any width of the marked standing line.

If, after throwing, the largest piece of the frisbee is less than 80% of its pre-thrown weight it is disqualified and the distance score of zero is recorded for that frisbee.

If, after throwing, any part of the frisbee is outside of the competition area, that frisbee will be disqualified and a distance score of zero will be recorded for that frisbee.

The equation used to determine the distance score is below.

$$\text{Distance Score} = \left(\frac{\text{Distance Thrown by Team 1}}{\text{Maximum Distance Thrown by Teams (1,2,3 ... n)}} \right) * 15$$

Accuracy (30 Points)

Teams will select two frisbees for accuracy scoring. The two selected cannot be used in the aesthetics or distance scoring. One team member shall stand on the standing line and safely throw the frisbee in the direction directed by the judges. The participating team member will throw the frisbee into the designated Target. The accuracy score shall be determined by the distance from the frisbee to the center of the target area as shown in the equation below.

$$\text{Accuracy Score} = \left(\frac{\text{Target Diameter}}{\text{Target Diameter} + \text{Distance from Center}} \right) * 15$$

If, after throwing, the largest piece of the frisbee is less than 80% of its pre-thrown weight it is disqualified and the distance score of zero is recorded for that frisbee.

If, after throwing, any part of the frisbee is outside of the competition area or outside the target diameter that frisbee will be disqualified and a distance score of zero will be recorded for that frisbee.