



AMERICAN SOCIETY OF CIVIL ENGINEERS

Concrete Frisbee

April 6-8, 2017

hosted at University of California Irvine

Event Description

Participants will create a flying disc made of concrete that will be cast prior to conference.

Each Frisbee will be tested in a designated area

Objective

To design and create a Frisbee from concrete that is durable and efficient.

Participant Rules

Each team must have at least 2 and no more than 4 members. Members can be either graduate or undergraduate students.

General Rules

1. Portland cement cannot be more than 30% by mass. All reinforcement must be non-metallic mesh. (Carbon fiber and fiberglass mesh can be used.) There is no restriction on choice of aggregates. No resins or epoxies may be used.
2. Molds of any form can be used.
3. Each team is allowed to bring two concrete Frisbees to the competition; however, the team must select one Frisbee to use prior to the beginning of the competition.
4. The Frisbee should be circular in shape, solid, and without any holes. It must be smaller than a 12"x12"x2" box and larger than an 8"x8" box
5. No reinforcement can be exposed at the time of the aesthetics judging and pre-competition measurements.
6. A mix table must be submitted on or before March 6, 2017 to asce.uci.conference@gmail.com.
7. Each participating team shall contain no more than four students. Participants may be undergraduate or graduate students.
8. The Frisbee must be made before the conference. The team is responsible of bringing the Frisbee to the competition location on the day of the competition.
9. Two events will be held to determine the maximum distance and accuracy of the Frisbee. Details of each event are outlined in the Scoring section below.

Scoring

Scoring Category	Description	Percentage of Total Score	Equation to Calculate Points
Distance	Boundaries will be marked and explained prior to the start of the competition. Each team will have three opportunities to throw their Frisbee, by the same person or by different people. The farthest distance of three throws will be counted. If the Frisbee lands outside of the boundaries or if the thrower's hand crosses the baseline, the throw will be disqualified.	25%	$\frac{\text{Your Throw}}{\text{Longest Throw}} \times 25$
Accuracy	A fixed target will be placed 50 feet away from the baseline. Each team has three chances of throwing the Frisbee, by the same person or by different people. The closest distance to the target of three throws will be counted. Measurements will be taken after the Frisbee comes to rest from the target to the closest edge of the Frisbee.	25%	$\frac{\text{Shortest Distance to Target}}{\text{Your Distance to Target}} \times 25$
Durability	The Frisbee will be weighted after both events have been completed; the residual weight will be used to calculate the durability. If the Frisbee loses less than 5% of its initial weight, the team shall receive the full score for this category.	20%	$\frac{\text{Final Weight}}{\text{Initial Weight}} \times 20$
Weight	The Frisbee will be weighed prior to the start of the events and will be compared to the lightest Frisbee.	20%	$\frac{\text{Weight of the Lightest Frisbee}}{\text{Weight of Your Frisbee}} \times 20$
Aesthetics	Aesthetics will be based on uniformity, surface texture, finish, and overall paint job prior to the start of the competition. The scoring is at the judges' discretion.	10%	