Concrete Frisbee Competition

Overview

- The primary composition of the concrete Frisbee must be Portland cement. All reinforcement must be non-metallic mesh (carbon and fiberglass mesh can be used). There is no restriction on the choice of aggregates.
- Molds such as an old plastic Frisbee, pie pan, or wooden forms may be used.
- Each team is allowed to bring two (2) Frisbees to the competition. The team must select one Frisbee to use prior to beginning the competition.
- The concrete Frisbee should be circular in shape, solid, and without any holes. The Frisbee must be smaller than a 12” x 12” x 2” box, and larger than an 8” x 8” box.
- Any external reinforcement must not create a shell around the Frisbee.
- Creative paint jobs are encouraged!

Rules

- Each participating team shall contain no more than four (4) students. Participants may be undergraduate or graduate students.
- The Frisbee must be built before the conference. The team is responsible to bring the Frisbee to the competition location on Saturday of the conference.
- Testing will be carried out at the conference on Saturday.
- Judges’ decision is final.

Scoring

Each team’s information will be entered into a pre-built Excel spreadsheet. Each team is encouraged to double-check the calculation when they are done competing.

Judging criteria is on the following page.
1. **Aesthetic (10%)**
   Will be based on uniformity, surface texture, finish, and overall paint job prior to competition. This judgement is at the judges’ discretion.

2. **Weight (25%)**
   Each Frisbee will be weighed prior to competition and be compared to the lightest Frisbee by the following equation. The lightest Frisbee will receive the highest points.
   
   \[
   \text{Point for Weight} = \left(\frac{\text{Weight of Lightest Frisbee}}{\text{Weight of your Frisbee}}\right) \times 25
   \]

3. **Distance Event (20%)**
   Boundaries will be marked and explained prior to starting the event. Each team will have three (3) opportunities to throw their Frisbee, by the same or different people. The best of the three will be counted. Measurement will be taken from the base line to where it first makes contact with the ground. If the Frisbee lands outside the boundaries or if the thrower’s hand crosses the baseline, the throw will be disqualified. The furthest throw will receive the total points.
   
   \[
   \text{Point for Distance} = \left(\frac{\text{Your Throw}}{\text{Longest Throw}}\right) \times 20
   \]

4. **Accuracy Event (20%)**
   A fixed target will be placed 50 feet away from the baseline. Each team has three chances of throwing the Frisbee, by the same or different people. The best of the 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. The shortest distance from the target will receive the total points.
   
   \[
   \text{Point for Accuracy} = \left(\frac{\text{Shortest Distance to Target}}{\text{Your Distance to Target}}\right) \times 20
   \]

5. **Durability (25%)**
   The Frisbee will be weighed after the competition and the residual weight will be used to calculate durability. Any Frisbee that has less than 50% of the original weight after the competition will receive a score of 0 for the durability portion.

   If \(\frac{\text{weight after}}{\text{weight before}} < 0.50\), then durability point = 0
   
   \[
   \text{Point for Durability} = \left(\frac{\text{Weight after Competition}}{\text{Weight before Competition}}\right) \times 25
   \]