



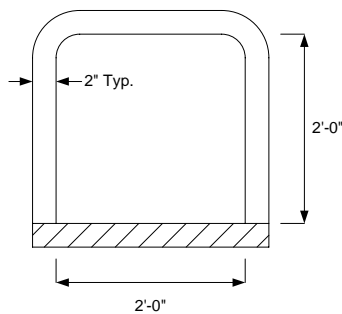
2007 North Central Conference Steelcrete Hockey Shootout

In an effort to bring more involvement into this year's conference, a steel and concrete special event has been created. Two competitions will be held, scored separately but run concurrently, after the completion of the concrete canoe races. The first competition is a steel hockey stick building competition. Sticks will be graded based upon aesthetics, weight, and shooting accuracy. The second competition will involve the creation of concrete hockey pucks. This competition will be graded again based on aesthetics, initial weight, final weight, and shooting accuracy.

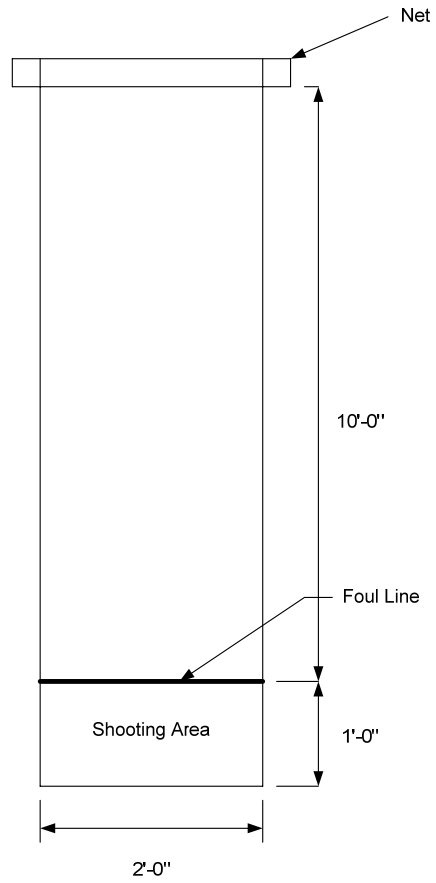
Shooting Layout

All shots shall be taken on the "ice rink" detailed below. The "shooting lane" shall be 2'-0" wide by 10'-0" long. The surface shall be constructed of oriented strand board (OSB), smooth side up. The "net" at the end shall have interior dimensions of 2'-0" by 2'-0". Posts shall be constructed of schedule 40 PVC, 2" in diameter, with the associated fittings where required.

Pucks shall be shot from behind a "foul line" in the "shooting area" which will be 2'-0" wide by 1'-0" deep.



Goal Elevation

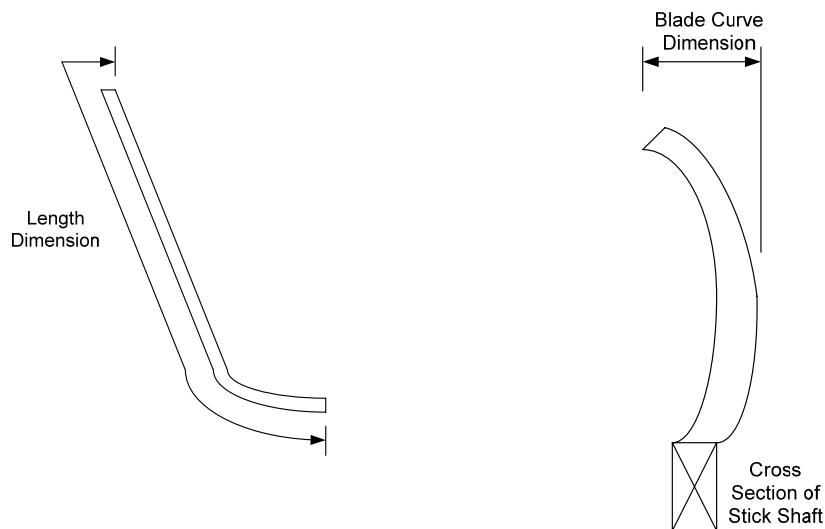


"Ice Rink" Plan View

Steel Hockey Stick Competition

Design Requirements

- Quantity:** Each school may only enter one stick in competition.
- Materials:** The entire stick must be composed of metal. No wood, composites, or other materials will be allowed. Decorative materials such as tape, paint, etc. are allowed, but may not be used structurally.
- Length:** Length of hockey stick shall be between 67 and 77 inches. Length of handle shall be determined by measurement with a string from the top of the shaft, down around the underside of the stick, out to the end of the blade. See figure below for measurement explanation.
- Blade Curve:** Depth of curve, front of blade to back of blade, shall not exceed 5 inches. See figure below for better measurement explanation



Blade Height: The tallest part of the blade shall not exceed 4 inches.

Weight: No weight limitations.

Shooting Accuracy

This part of the competition will judge how effective your hockey stick is at delivering the puck to the back of the net! Shooting shall occur on the "ice rink"



described above in the “Shooting Layout” section. Four (4) shots are to be taken by each team, by four (4) separate shooters. Should a team be comprised of less than four members, shooters will be allowed to shoot more than once. Each shooter is allowed one (1) practice/warm-up shot using a rubber puck supplied by the event coordinator. Actual scoring shots shall be taken using concrete pucks supplied by one of two methods:

- 1) Concrete pucks made by your chapter as part of the Concrete Puck Competition.
- 2) Concrete pucks supplied by the event coordinator. These pucks will not be scored as part of the Concrete Puck Competition.

Scoring

Shooting: 5 points shall be awarded for each scoring shot

Weight: Weighing of sticks shall occur prior to any shooting. The heaviest stick will be given 1 point and the lightest stick i points, where i represents the number of sticks entered.

Aesthetics: Aesthetics judging of all sticks shall occur prior to any shooting. Judging to be performed by impartial judges selected by the Special Events Coordinator. Final aesthetics score shall be determined based off the average of the judges scoring of each stick. In the event of a tie, a coin toss will determine final aesthetic rankings. The least aesthetically pleasing stick will be given 1 point and the most aesthetically pleasing stick i points, where i represents the number of sticks entered.

Final Scoring Equation

$$\text{Final Score} = 1.7 * \Sigma(P_s) + 30/i * (P_e) + 36/i * (P_w)$$

i = Number of sticks in competition

P_s = Points from shooting, maximum of 20

P_e = Points from aesthetics, maximum of i

P_w = Points from weight, maximum of i

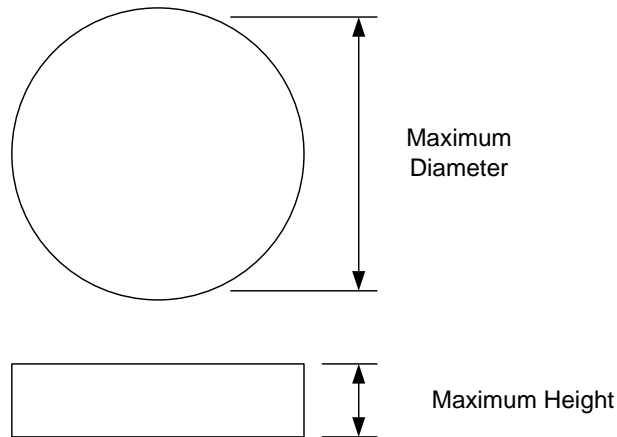
Should a Final Score tie occur, a shoot out (first to miss format) shall occur using rubber pucks supplied by the Special Events Coordinator.



Concrete Hockey Puck Competition

Design Requirements

- Quantity:** Each school may only enter four (4) pucks in competition.
- Materials:** The entire puck must be composed of concrete and concrete reinforcement, a minimum of 60% must be concrete. No rubber, epoxy, or other materials will be allowed. Decorative materials such as tape, paint, etc. are allowed, but may not be used structurally.
- Dimensions:** Pucks shall be between 2.75 and 3.25 in diameter. Thickness shall be between .75 and 1.25. See figure below for measurement explanation.



- Weight:** No weight limitations.

Shooting Accuracy

This part of the competition will judge how effective your pucks are at finding the back of the net! Shooting shall occur on the “ice rink” described above in the “Shooting Layout” section. Four (4) shots are to be taken by each team, by four (4) separate shooters. Should a team be comprised of less than four members, shooters will be allowed to shoot more than once. Each shooter is allowed one (1) practice/warm-up shot using a rubber puck supplied by the event coordinator. Actual scoring shots shall be taken based off of shots performed using concrete pucks.



Teams whose chapter is not entered into the Steel Hockey Stick Competition may use steel sticks supplied by the Special Events Coordinator for shooting.

Scoring

Shooting: 5 points shall be awarded for each scoring shot

Weight: Weighing of pucks shall be a two part process. Initial weigh in shall occur prior to any shooting. The heaviest puck group, all 4 pucks together, will be given 1 point and the lightest puck group i points, where i represents the number of teams entering pucks in competition. Final weight in shall be done after all four pucks for a given team have been shot. Final weight shall be based off of the largest portion of each puck found after shooting.

Aesthetics: Aesthetics judging of all pucks shall occur prior to any shooting. Judging to be performed by impartial judges selected by the Special Events Coordinator. Final aesthetics score shall be determined based off the average of the judges scoring of each set of pucks. In the event of a tie, a coin toss will determine final aesthetics rankings. The least aesthetically pleasing pucks will be given 1 point and the most aesthetically pleasing pucks i points, where i represents the number of teams entering pucks in competition.

Final Scoring Equation

$$\text{Final Score} = 1.7 * \Sigma(P_s) + 30/i * (P_e) + 15/i * (P_{wi}) + 21/i * (P_{wf})$$

i = Number of teams submitting pucks in competition

P_s = Points from shooting, maximum of 20

P_e = Points from aesthetics, maximum of i

P_{wi} = Points from initial weigh in, maximum of i

P_{wf} = Points from final weigh in, maximum of i

Should a Final Score tie occur, a shoot out (first to miss format) shall occur using rubber pucks supplied by the Special Events Coordinator.

