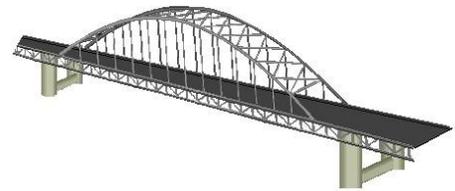


Toothpick Bridge Competition Official Rules 2011

Physics and Pre-Engineering Club at Northern Kentucky University



Final Judging will be on: April 6, 2011 at 4:00pm

The goal of the competition is to design the strongest possible structure to span at least 560 mm using only round wooden toothpicks and glue. The strength of the structure will be determined by dividing the load it supports by its weight.

Entrants:

The contest is open to any Northern Kentucky University student, of any major. In order to be entered into the contest you must register by Monday, March 28, 2011. Teams (of one or two people) may enter the contest but please understand only one prize will be given per bridge.

Design Constraints:

Mass: The total mass of the structure cannot exceed 85 grams (3.00 oz)

Span: Each structure must span at least 56 cm clear of any supports.

Height: The overall height of the structure may not exceed 30 cm.

Toothpicks: Round or Flat wooden toothpicks may be used. The toothpicks are to be glued together as they come from the box. No cutting, splicing, or fraying of the ends is allowed, except that tips at the top or end of the structure may be evened off to enable the weights to rest flat on the top and to allow the end of the structure to butt up flush with the supports.

Glue: Only a white glue, such as Elmer's, or a yellow woodworking glue, such as Titebond, may be used. Structures built with other glue will be disqualified.

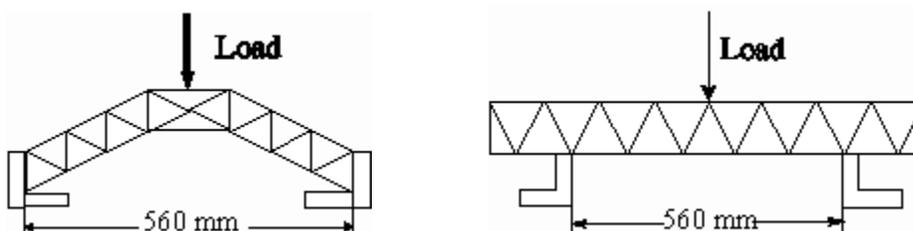
Coatings: Structures may not be painted, sprayed or dipped in any coating material.

Compliance:

At check-in, faculty judges will evaluate each bridge. Bridges will be weighed, measured, and reviewed for compliance with rules regarding materials. If a bridge does not comply with any of the rules, it will be disqualified from competing for the prizes, but may still be loaded to determine its strength. **The decisions of the judges are final.**

Supports:

The structure will be placed in or on supports made from two 2x4's as shown in the illustration. Structures with no arch in the bottom chord will be placed on the supports to achieve the required minimum span. No lateral or side support is allowed.



Loading:

Metal weights, from the weight kits in the Physics Classrooms will be placed on the top of the structure at the mid-span by the contestants until failure. Contestants may use cards to shim the base of the bridge level.

Scoring:

Faculty Judges will record the total weight supported by the bridge. The judge will make the final decision as to whether a structure successfully supported the final weight before failure. The total weight supported will then be divided by the recorded weight of the structure to determine the strength ratio of the bridge.

PRIZES:

The three strongest bridges overall will be awarded First, Second and Third Place prizes along with certificates. Also a door prize will be given out.

Competition:

The competition will be held Wednesday, April 6, 2011 at 4:00pm
Northern Kentucky University's Natural Science Center room 128.

****Please have your bridges there by 3:45pm****

****If you have any questions please contact Laura Brown at brownl4@mymail.nku.edu or (859) 250-8168****

***Source:**

Many of these rules were taken from Minnesota State University Moorhead which just held their 36th Annual Toothpick Bridge Competition last month. A link to their website is below.

<http://www.mnstate.edu/bridge/Index.htm>

These are the official rules of the Toothpick Bridge Competition for the Physics and Pre-Engineering Club at Northern Kentucky University.