



## 3<sup>rd</sup> Annual CSCE South Saskatchewan Section Student Popsicle Stick Bridge Competition at University Of Regina (2015)

**Objective:** To design a bridge from a maximum of 100 popsicle sticks with the highest possible load-to-weight ratio that also meets the required specifications for its geometry.

**Date/Time:** January 28, 2015 (Wednesday)

Registration:	3:30 ~ 3:55 pm	Measurements and inspections by the judges.
Competition:	4:00 ~ 5:00 pm	Testing of the bridges.
Awards/Networker:	5:00 ~ 6:00 pm	Food will be provided.

Register your bridge and team any time between 3:30 pm and 3:55 pm. Your bridge will be weighed, measured, and inspected by the judges with respect to the rules and specifications. ALL team members should attend the bridge testing from 4:00 to 5:00 p.m.

**Location:** ED 619

**Prequalification:** Bridges entries may be constructed by individuals or groups of up to 4 who are undergraduate and/or graduate engineering students at the University of Regina. Each registered individual or group may be involved with the design and construction of only ONE bridge.

**Contest Registration:** Participants shall indicate their interest in the contest by registering in person with Dr. Kelvin Ng at ED 424 from January 19~23. The registration is FREE. Building materials for the bridge will be provided by CSCE and can be picked at the time of registration (or on/before January 23). ONLY those materials that are provided to you can be used in the construction of the bridge.

**Instruction to Participants (Testing Specifications):** Bridges shall have a clear span, maximum height, width, maximum bearing length, loading platform and minimum clearance for traffic as shown in the figure below.

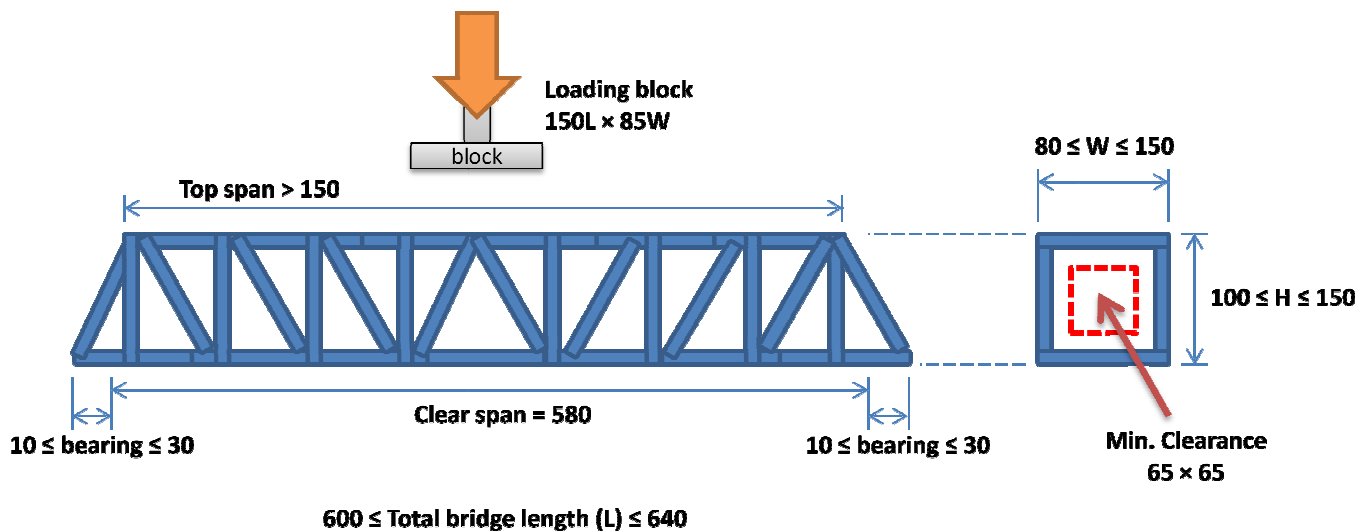


Fig 1. Required Dimensions of Bridge (measurements in mm)

Note again that the materials to be used in constructing the bridges are ONLY the Popsicle sticks, dental floss and white glue as provided at the time of contest registration. Popsicle sticks may NOT be cut or split. A maximum of 100 whole Popsicle sticks may be used. Painting of the bridges is NOT allowed.

Reactions at the supports are to be vertical only; at no time may the bridge contact the vertical members of the loading frame. The horizontal reaction initiated by such contact has been judged a typical of “truss” bridge behavior, and more characteristic of an “arch” bridge. Bridges exhibiting this arch type behavior at any point during testing will be disqualified.

**Testing and Judging:** Upon delivering the bridge for testing, participants will complete a written statement indicating the following: (1) team name; (2) names and student numbers of all members of the design/build team; (3) number of sticks used in construction; (4) predicted failure load of the bridge. The bridge will be measured to check if it meets specifications then tested for its failure under load.

**Performance Criteria:** Points will be awarded according to this equation:

$$Ratio = \frac{Maximum\ applied\ load\ (N)}{Weight\ of\ the\ bridge\ (g)}$$

- a. For the bridge with the highest applied load-to-weight ratio: up to 35 points; for second highest load-to-weight ratio: 25 points; similarly 20 for third highest, 15 for fourth highest, 10 for fifth highest, and finally 5 for sixth highest;
- b. A 10-point bonus will be awarded to each team whose bridge fails within 10% of its predicted failure load ; and
- c. If the bridge does NOT meet geometry specifications, it may be subject to point deductions from 3~15 points to disqualification at the discretion of the judges.

	<b>Points</b>	<b>Prizes:</b>
<b>1</b>	First Place overall	\$ 300
<b>2</b>	Second Place overall	\$ 200
<b>3</b>	Third Place overall	\$ 100

**Payment of Prizes:** The winners of the contest will be officially announced and will receive their prizes during an Awards Ceremony and Networker. Food will be provided for participants.

**Questions?** Please contact Dr. Kelvin Ng (ED 424) for additional information.

**IMPORTANT:** *Rules subject to change as needed. We reserve the right to disqualify any entry that we, in our sole and absolute discretion, determine does not meet the above criteria. The decisions of the judges are final and binding in all matters related to the competition.*

This event is sponsored by the Faculty of Engineering and Applied Science at U of R.

*Lastly updated on: Jan 5, 2015.*