



ENGINEERS &  
GEOSCIENTISTS  
BRITISH COLUMBIA

# TRI-CITY BRANCH POPSICLE STICK BRIDGE COMPETITION

## RULES

### IMPORTANT

This document contains important information that you must follow to participate in the popsicle stick bridge building competition.

Please read, understand and follow the rules so that your bridge can be tested fairly against the bridges from other competitors. Bridges are to be built in advance and brought to the venue for testing on the day of the competition. Please see our web site for the schedule of events [[www.egbc.ca/tc](http://www.egbc.ca/tc)].

### CATEGORIES

There will be separate categories for competitors from Elementary School Grades 1 to 5, Middle School Grades 6 to 8, and High school Grades 9 to 12.

### ENTRIES BY TEAMS

Bridges may be entered in the competition by individuals or teams. The maximum number of students on a team is four. Teams that receive a prize are responsible for dividing the prize.

### MULTIPLE ENTRIES

Competitors may enter a second bridge in the competition, but competitors must submit a separate entry form for each bridge. Only one prize will be awarded to a competitor with more than one winning bridge.

## **AWARD FOR CREATIVITY**

A prize will be awarded for the most aesthetically creative bridge, as judged by a panel of experts.

## **MATERIALS**

You may only use the popsicle sticks and glue provided in the bridge kits supplied by the organizers. Sticks may not be treated in any manner. You may not cut, bend, grind or notch any of the sticks to construct your bridge. No other construction materials are allowed, including screws, pins, nails, wire, string and other types of glue.

Your kit may contain as many as 150 sticks, but 100 sticks is the maximum number of sticks that you may use in the construction of your bridge. You may use paint and two sheets of construction paper for decorative or aesthetic purposes.

Completed bridges will be weighed on the day of the competition, so please make sure that any decorations that contribute to the weight of your bridge can be removed easily for weighing and testing.

## **TEST APPARATUS**

Your bridge will be placed in the test apparatus with the ends of the bridge resting on two landing pads. The load foot will apply force to the middle of the deck of the bridge. The force will be slowly increased until the bridge breaks. The downward vertical force is measured to determine the maximum strength of your bridge.

## **RIGIDITY**

Your bridge must be rigid construction. Springy bridges that flex when placed underload cannot be tested.

## **DIMENSIONS**

Your bridge must fit the following dimensions:

\*The bridge will be tested across a span of 500 mm.

\*Your bridge must be at least 575 mm long. There is no maximum length for the bridge.

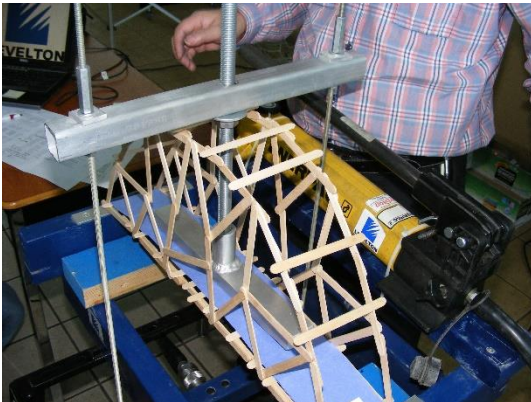
\*The landing pads of the test apparatus extend behind the 500 mm span at each end. The outside width of the bridge must be less than 125 mm. Popsicle sticks are slightly shorter than 125 mm.

The bridge height can be up to 200 mm above the landing pads.  
The bridge depth must be no more than 150 mm below the landing pads.  
The bridge may not touch the front faces of the landing pads.

### **PATH FOR THE LOAD FOOT**

Your bridge must have a clear path, 20 mm in diameter, for the load leg of test apparatus to travel straight down and connect to the removable load foot.

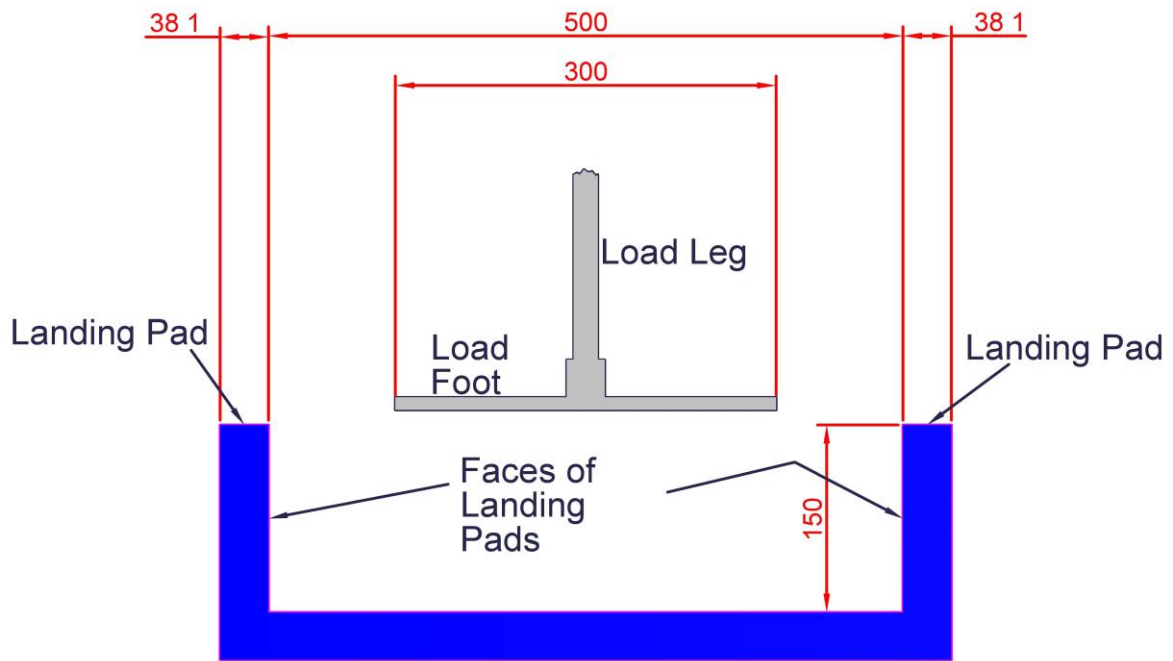
To position the load foot, the deck of your bridge must also have a clear path, 50 mm wide and 75 mm high. The load foot is 38.1 mm wide and 300 mm long. The load foot will be oriented in the same direction as the length of the span.



The load foot normally applies force to the deck of the bridge, but can also apply force to the top of your bridge. If unclear, please indicate where you want force to be applied on your bridge. Force will not be applied to the side trusses.

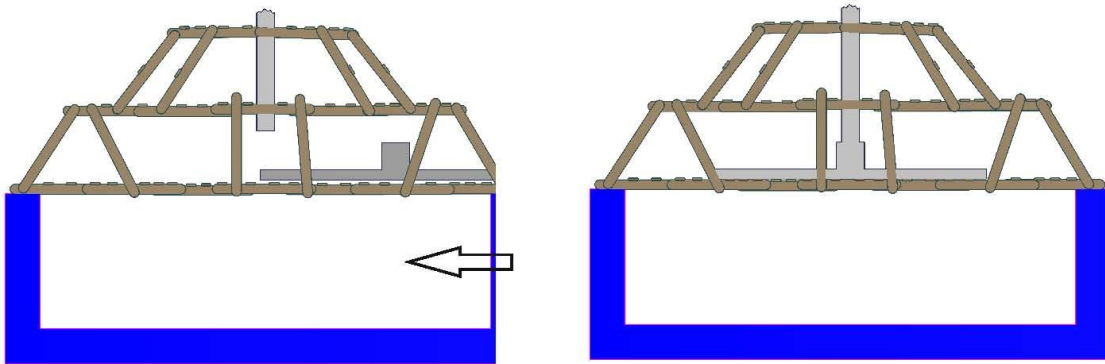
The deck of your bridge does not have to be completely covered in sticks. You may wish to add construction paper to the deck area.

### **DIMENSIONS OF THE TEST APPARATUS**



Above: All dimensions in mm

## POSITIONING THE LOAD FOOT



Above left: The load foot is positioned along the bridge deck. Do not copy the design of this bridge, which is not a good example.

Above right: The leg of the test apparatus is lowered through the top of your bridge and connected to the load foot.