Professional Engineers Ontario
Lake Ontario Chapter

PEO Lake Ontario Chapter – Popsicle Stick 2026 Bridge Building Competition Rules

Part 1. Event Information

1.1. The objective is to build a bridge from popsicle sticks and white glue. The bridges will be judged on the Maximum Load supported, Performance Rating (weight carried / bridge weight), and Engineering Finesse.

1.2. There are two levels in this competition:

a. Junior Level: Students in grades 5 and 6

b. Senior Level: Students in grades 7 and 8

1.3. Students in the Junior Level participate as a team of a minimum of 2 and a maximum of 4.

1.4. Students in the Senior Level participate either individually or in a team of a maximum of 4.

1.5. Each team is allowed to enter the competition with only one bridge.

1.6. There is a $10 entrance fee per bridge.

1.7. The bridge design may follow any configuration provided it complies with the rules described in this document.

1.8. Bridges must be constructed before the event. Please ensure adequate time is given for the glue to dry.

1.9. The Competition will be held on May 9, 2026, from 9:30 a.m. to 12:00 p.m.

1.10. The venue is Gym 1 and 2 at Ontario Tech University. The address is 21 Avenue of Champions, Oshawa, ON, L1G 8C4.

1.11. Registration and bridge testing will begin at 9:30 a.m.

1.12. Bridges will be tested on a first-come, first-served basis. However, the final rankings will not be announced until the last bridge is tested.

1.13. Prizes will be distributed at the venue after the event.

1.14. A pizza lunch will be provided to all attendees.

1.15. At least one parent/guardian must accompany each team.

1.16. Further information will be posted on our Eventbrite page.

Part 2. Competition Rules

2.1. The bridge weight includes popsicle sticks, a construction paper deck, and a reasonable amount of white glue.

2.2. The bridge may be constructed using a maximum of 200 popsicle sticks, each approximately 115 x 10 x 2 mm. All popsicle sticks must be left whole and should not be cut shorter.

2.3. Only regular white all-purpose glue, such as Bondex® or LePage Bondfast®, is permitted. No epoxies, contact cement, or carpenter's glue is allowed. A bridge that shows evidence of glue other than white glue will not be eligible for prizes.

2.4. Construction paper can only be used as the bridge deck. The deck must be glued to the bridge and should be cut to fit its design.

2.5. No materials other than popsicle sticks, glue and construction paper may be used. (All materials are available at common dollar stores)

2.6. The following physical dimensions must be followed:

a. Maximum Weight = 450 gr
b. Minimum Total Length = 600 mm
c. Clear Span = 500 mm
d. Max Height Above bridge deck = 300 mm
e. Max Height Below Bridge deck = 150 mm
f. Maximum Width = 150 mm
g. Minimum 25 mm clearance to the sitting point of the bridge.

2.7. The bridge structure is not permitted to apply loading to the vertical faces of the support structure at any time during testing.

2.8. No bridge modification is allowed once the judging process is started.

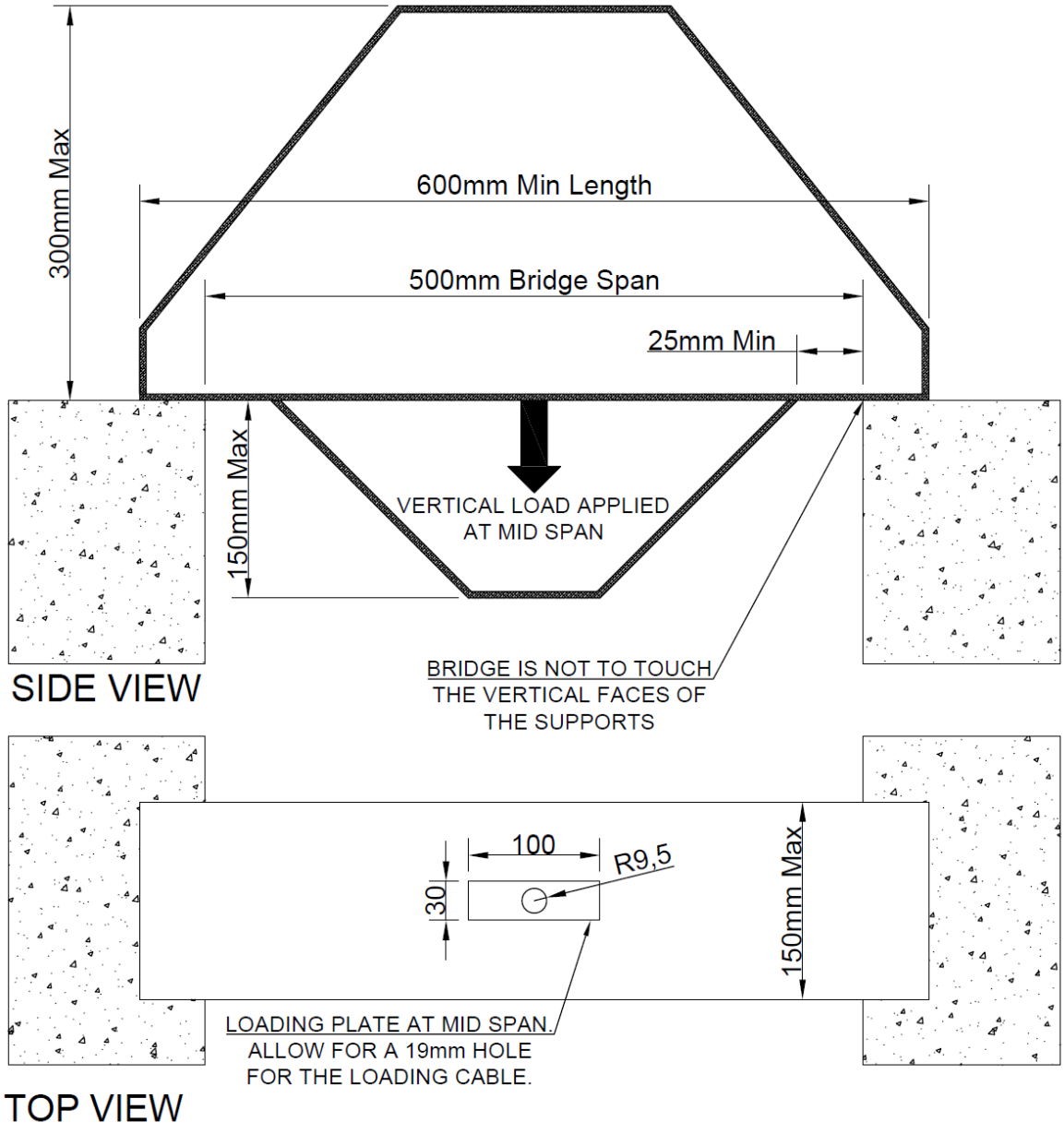
2.9. A matchbox car (approximately 30 mm wide, 70 mm long, 25 mm high) must be capable of being rolled across the bridge deck.

2.10. The bridge must allow the Loading Plate (100 x 30 mm) to be placed at the centre of the bridge span, and a 19 mm diameter rod to pass through the centre of the loading plate to apply the load.

2.11. The bridge's deck should be designed to support the Loading Plate.

2.12. It is recommended that the hole be placed during bridge construction. If no hole is present, the judging team will cut a hole in the bridge deck before testing.

2.13. The diagram below depicts the acceptable specifications. This diagram is provided for illustrative purposes only and does not represent a specific bridge design concept.



Part 3. Evaluation Guidelines

3.1 The Judging panel will ensure that each entry complies with the rules above. Only bridges that comply with the rules will be eligible for participation; bridges that do not comply will not be tested.

3.2 Bridges will be weighed before testing.

3.3 The judges will ask questions about engineering considerations in the design and construction of the bridge. They score “Engineering Finesse” based on four criteria: Joint Work, Uniform and Symmetrical Build, Use of Truss Work / Creativity, and the Matchbox car test, each with a maximum score of five.

3.4 The load will be applied from below to the loading plate at the mid-span of the bridge on the bridge deck. Ensure adequate reinforcement to transfer the load from the loading plate to the bridge.

3.5 A load will be applied until the bridge breaks or deflects by more than 50mm. The peak load recorded will be considered the failure load.

3.6 Three values will rank bridges

a. Maximum Load Carried (in Newtons)
b. Performance Rating = Failure Load / Bridge Weight (N/gr)
c. Engineering Finesse (out of 20 scores)

3.7 All bridges will be destroyed during testing.

3.8 All decisions of the Judging Panel will be final.

3.9 The testing of all bridges may be photographed and/or videotaped.

3.10 The prizes will be divided if several teams have identical high scores.

3.11 A copy of the “Scoring Sheet” is attached as a reference.

Thanks for your interest, and HAVE FUN!