

# SPAGHETTI BRIDGE CHALLENGE



## Spaghetti Bridge Conditions



### Description:

A **spaghetti bridge** is a **bridge** made of uncooked **spaghetti**. **Bridges** are constructed for both educational experiments and **competitions**. The competition is a fun and challenging opportunity for students to test their engineering skills and experience the planning, creativity, problem-solving and team-work required for a career in engineering.

### Student Team:

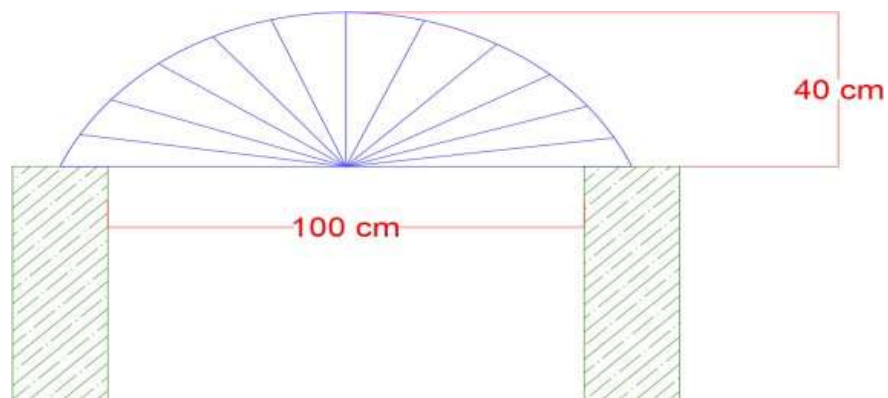
- A team is limited to two to four students.
- Each team must have a supervising faculty advisor who will see that the team complies with the rules of the competition.

## Material

- Pasta: commercially available or homemade pasta, made solely of flour. The pasta may be shaped, molded or boiled in water, but no additives are allowed.
- Commercial glue or epoxy shall be the only joining material and may not be used as a structural member.
- It is intended that glue be used for joints only; continuous strands of glue running along the length of any member are not allowed

## Loading Platform

- An 100mm x 50mm x 10 mm plate with a centrally drilled 9 mm bore.
- The loading platform is to be positioned under the pathway, in the middle of the bridge.
- The maximum vertical depth of the bridge from the highest point to the lowest point shall not exceed 400 mm.
- The bridge must have a total length of 1100mm, with a clear span of 1000mm, 50mm for each support.
- The maximum allowable mass of the bridge, including the heavyweight loading platform and U-bolt, will be 1500 grams.
- The minimum length of each member in the truss is 7.5cm joint to joint with a clear span of 6cm (Without glued joints).



## **Road Deck**

- To provide a suitable road surface, the bridge must have a solid, continuous pasta road deck that is at least 50 mm wide and covers the full length of the bridge.
- Gaps in the bridge deck are not to exceed 2 mm.
- The deck of the bridge must be uniform in width

## **Bridge Loading and Support**

- The support for the bridge shall be from the top of the level surfaces of the end supports only.
- The vertical edge of the supports shall not be used as a support in any way.

## **JUDGING**

- Bridges will be inspected and weighed by the judges prior to testing to ensure all bridges comply with the rules. Bridges failing inspection will be disqualified.
- The load will be applied to the U-bolt of the heavyweight loading platform that is located at mid-span of each bridge. The load will be progressively increased until failure occurs.
- Bridges may not be touched while under load.
- In the event that two bridges fail at the same load, the lighter bridge will be ranked higher than the heavier one.

**ON ALL MATTERS, THE JUDGES' DECISION SHALL BE FINAL. The judges have the right to disqualify any bridge that in their opinion is in violation of the intent or letter of the rules. The judges have the right to accept any bridge that in their opinion is consistent with the rules.**

## **Awards:**

- All participants will receive a Certificate of Participation.
- The winners will be awarded a trophy.

