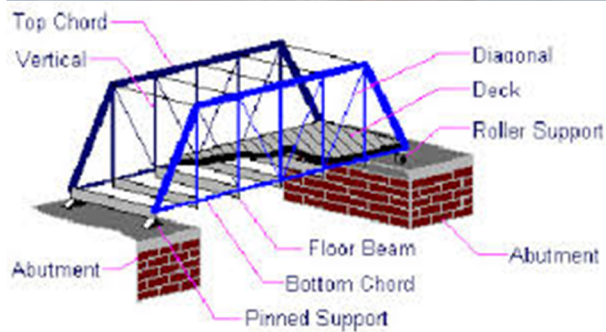


## Bridge Conception:



Bridges are one of the most useful and magnificent structures of the modern civilization. With ever improving designs bridges carry immense loads daily and are also

expected to handle incidental loads due to natural calamities.

### **About:**

In our real life we come across various types of utilitarian bridges. Participants will design and fabricate their own bridge and test for the maximum load. Now you have a chance to design a most innovative, efficient and fabricated Truss bridge. The bridge model made by them can take up to 1000 times the self weight. You don't believe that is possible? Participating in our event will make you believe that it is possible!

### **Rules and Regulations:**

1. Participants need to register as a team.
2. The team should contain 3 members.
3. Event consists of two rounds.
4. The participant may use software to design the bridge like Staad Pro or Candy.
5. 1<sup>st</sup> round consists of designing of bridge.

#### **1<sup>st</sup> round:**

In the 1<sup>st</sup> round participant have to design the most efficient bridge within the specifications. Model bridges are intended to be simplified versions of real world bridges, which are designed to accept a load in any position and permit the load to travel across the entire bridge. The participants who designed according to specifications and also the maximum load and self weight are allowed to 2<sup>nd</sup> round. The Participant also check for most efficient design.



6. And the participants who are selected in the 1<sup>st</sup> round are allowed to fabricate the bridge which they design in 2<sup>nd</sup> round.

7. In the 2<sup>nd</sup> round after fabrication bridge is tested for loading.

#### 1. Loading Procedure:

The load would be applied at a point 100mm left of the centre of the bridge. The loading would be done below the bridge using a 5cm x 10cm loading plate- connecting hook system. The plate would rest on the deck while the hook connected to the plate would go through the deck and below where weights would be kept. For this the bridge should have a 10mm circular hole through the deck.

A combination of weights and sand would be used for loading so as to get the exact loading for failure. The minimum weight would be 5kg and thereafter would be incremented.

#### 2. Testing and Judging Criteria:

Prior to testing of the bridge, the dead weight of the bridge is noted down. Failure to adhere to the maximum weight limit of the bridge would result in disqualification.

All construction and material requirements will be checked prior to testing. Bridges failing to meet these requirements will be disqualified.

The bridge with the highest structural efficiency,  $E$ , will be declared the winner.  $E = \text{Load supported in kg} / \text{Mass of the bridge in kg}$

Failing to meet the dimension specifications of the bridge would result in immediate disqualification.

All decisions of the judges shall be final.

8. The results will be based on above criteria.

Contact us:-

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