ROPEWAY DESIGN

We know that rope ways are needed for crossing over large spans of land or huge masses of water. The design and construction of such ropeways is a necessity. In this event one has to design and make a model of a ropeway. It tests your technical skills and application of them in practical life. Here what you need to know is simple laws of mechanics. Cable car or tram system is one of the examples for this type of rope way systems. Come and show your skills in designing the structure using simple things.

Problem Statement:
Our aim is to prepare a ropeway system. We have to design and construct two self-supporting vertical structures of different heights so as to support the string of the ropeway.

Event Details:
Each team may consist of two to three students.
It is a two round event, the first one being an aptitude test.
In the second round two vertical structures with different heights have to be designed, analysed and constructed within **four hours**.
Each model is then tested according to judging criteria.
Two rounds have a time gap for the model for enough drying of glue used and structure to get strengthen.

Material Provided:

- Popsicle sticks
- Glue
- Threads
- Cutters
- Pencils
- Nails
- Nylon rope
- Scale
- Hook

Note: Use of other material is not allowed.

Rules and Regulations:

- The structure should be constructed with Popsicle (ice cream) sticks.
- The structure may be truss structure, hallow columns etc. depending on participants innovativeness.
- The minimum height of the smaller tower should be **30cms**.
- The maximum height of the larger tower should be **80cms**.
- The ratio between the **heights of the structure to the length of base** should not be more than 1.
- **Width** of the structure should not be more than **12 cm.**
- The structure should sustain stress by moving load.
- Load should move between higher to lower tower.
- The hook and load assembly should be able to slide on the string which is supported by the two structures.
- Only one participant is allowed to perform the loading (teammates can also assist him).
- Holding the load carrier during loading is not allowed.
- Anchoring should be done to bases for stabilizing; distance between them should not be more than twice that of horizontal distance between towers.

Judging Criteria:

- The structure should support moving load without any external support.
- Failure of a single member is considered as failure of whole structure.
- Weight should move from one end to another.
- The structure should be strong enough to support a moving load without sway or deformation.
- Judgment is decided with least slope of rope, high load carrying capacity, less self weight.

Event Managers' Contact Details:

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