



NIRMITEE 2019

26th March.

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EVENT: SMARTCRETE

NIRMITEE's "Smartcrete" has brought a new challenge in front of budding civil engineers.

Testing of cubes will be done on 26th March 2019.

**Participants will have to cast three cement mortar cubes of dimensions
70mm x 70mm x 70mm in their respective college laboratory.**

MATERIALS:

1. The participants are advised to use standard OPC cement as binding material.
2. Only **Fly ash** can be used as a partial replacement to cement
3. Participants have to prepare M30 cement mortar mix. A portion of cement can be replaced by fly ash.
4. Use of **Crushed Sand** as fine aggregate is advised.
5. Use of **Admixtures** is **not allowed**.
6. Use of **Fibre** is **not allowed**.

Task to be done:

- 1) Design of M30 cement mortar mix with 3-days curing period is to be done.
- 2) Three cement mortar cubes of dimension 70mm x 70mm x 70mm have to cast in respective college laboratory under the guidance of the professor.
- 3) A code needs to be grooved on the cubes while casting. Code will be provided to Participants on day of casting i.e. 22nd March.
- 4) The cubes have to be cured for 3 days. A mix design report has to be prepared by each participating group and must be explained.
- 5) Mix Design Calculations are to be submitted by each group.

Rules:

1. Maximum 3 participants are allowed in each group.
2. All the students with the valid ID card from their respective colleges are allowed to participate in the competition.
3. The information provided in report is must be correct, non-objectionable and clearly explainable.
4. The decision of judges/ NIRMITEE team will be final and binding.

INSTRUCTIONS:

1. Compressive strength of the cubes will be measured using Compression Testing Machine.
2. Every group should bring the **mix design report** and **cost analysis** of cement mortar cubes. The report should be able to clearly explain by participants.
3. **3 Days** compressive strength will be considered for the testing.
4. The decisions of judges will be binding and final.
5. **Photographs of material** used and short **2 min video of casting process are compulsory.**
6. Note down the weights of cement, Fine Aggregate, Fly ash carefully, fill it in the form send to your mail.
7. A form will be sent to participant's mail, that should be filled and revert back before 22nd march by 11:59 PM.
8. If in case, Tie occur then winners will be selected on the basis of COST ANALYSIS and TECHNICAL VALIDITY of material used in replacement of cement.

JUDGING CRITERION:

Sustainable, Economical mix with Maximum strength, optimal cement utilisation will be broad criteria to judge mix design.

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